



GOVERNMENT OF MADRAS

REPORT OF THE MADRAS PROVINCIAL HOUSING COMMITTEE



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GOVERNMENT OF MADRAS

PROVINCIAL HOUSING COMMITTEE, FORT ST. GEORGE, MADRAS.

Re. No. 126/47-Hsg.

Dated 20th December 1947.

From

SRI L. VENKATAKRISHNAN, B.A., B.E., I.S.E. (Retd.),
Chairman.

To

THE SECRETARY TO GOVERNMENT,
DEVELOPMENT DEPARTMENT,
Fort St. George, Madras.

SIR,

[Subject.—Housing—Report of the Madras Provincial Housing Committee—Forwarded.
Reference.—(1) G.O. Ms. No. 1397, Public (P. & D.), dated 10th May 1947, (2) G.O. Ms. No. 2469, Development, dated 4th June 1947 and (3) G.O. Ms. No. 2788, Development, dated 27th June 1947.]

I have the honour to forward the Report of the Provincial Housing Committee appointed by the Government in the Government Orders cited above.

2. In response to the questionnaire issued by the Provincial Housing Committee, 69 municipalities and 182 major panchayat boards sent their replies. The replies of 51 municipalities and 87 panchayats were accompanied by maps indicating the availability and distribution of building land suitable for housing development in their respective areas. The Committee desired to have all the maps reduced to a uniform size (viz., folio size) and print them as annexures to the Report. Estimates were called for reducing them to a uniform size and printing them from the Assistant Director of Survey, Central Survey Office, Madras. He has just stated that they were not fit for reproduction by photo reduction straightaway, that they would have to be redrawn by draughtsman to the size required and that, if the size be settled, he would arrange to send the estimates. As there was no time to obtain the estimates and order the printing, the printing of the maps has not been taken up. The maps are referred to in paragraphs 63 and 87 of the Report and are enclosed. Copies of House Designs referred to in paragraph 152 of the Report are also enclosed. They are numbered as Annexures I to III to the Report.

3. The recommendations contained in the Report have the unanimous approval from all the members except from Mr. M. B. Chablani, whose minutes of dissent are appended to the Report.

The minutes deal with three points, viz.—

(a) *Cost of house-sites.*—The Committee carefully examined the question at length and came to the conclusion that the value of land required for public housing and housing by public utility bodies should be fixed by suitable legislation; while it is theoretically possible to apply this legislation in the manner suggested by Mr. Chablani, since housing schemes by public bodies are likely to be taken up only in large compact areas, it was felt that it was unlikely to interfere with private transactions for middle and upper class housing.

(b) *The Co-operative Housing and the Provincial Housing Board.*—As the bulk of the housing by State subsidy is for the uneconomic low income groups and only the housing for the upper middle classes and above would come under the purview of co-operative venture the Committee considered that the financing of co-operative housing should be dealt with by Government through the Co-operative Department as at present. But unitary control for the procurement and distribution of materials is provided for, as partial controls will defeat its own purpose. The difficulties in the way of anticipating requirements and advance planning is a matter of co-ordination of activities of the two departments and, it is felt, can be arranged for in practice.

(c) *Exemption from property tax of new houses.*—The Committee considered that though the exemption from property tax proposed might appear to be a trifle, it would still be a psychological bait for stimulating house building activity just as exemption from land tax by Government for a term of years forms an incentive for reclamation of land for cultivation. It is an expedient which the Committee feels might be attempted for what it is worth. It may not produce spectacular results, but can certainly stimulate.

I have the honour to be,

Sir,

Your obedient servant,

L. VENKATAKRISHNAN,

Chairman.



**REPORT OF THE
MADRAS PROVINCIAL HOUSING
COMMITTEE**



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REPORT OF THE MADRAS PROVINCIAL HOUSING COMMITTEE

CHAPTER I

INTRODUCTION

Appointment of the Housing Committee.

1. The shortage of houses and the unsatisfactory conditions of housing in the Madras Province have been getting more and more acute for some time past and the Government of Madras have been considering how best the problem can be successfully tackled in the Province. The Madras Legislative Council at its meeting on the twelfth February, 1947 passed a resolution recommending to the Government "*that a Committee be appointed to examine and suggest measures for solving the problem of housing in the Province with special reference to urban and semi-urban areas with a view to overcome the existing acute housing shortage and to raise the standard of housing generally.*" This resolution was accepted by Government and in pursuance thereof, Government, in their Order Ms. No. 1397, Public (Planning and Development), dated the tenth May, 1947 and Ms. No. 2469, Development, dated the fourth June, 1947, directed that a Committee be constituted to examine and suggest measures to solve the problem of housing in the Province.

Personnel of the Committee.

2. The personnel of the Committee consisted of the following :—

(1) Sri Diwan Bahadur L. Venkatakrishnan, retired Chief Engineer, Public Works Department—*Chairman*.

(2) Sri P. Suryanarayana Rao, M.L.C.,

(3) Sri N. M. R. Subbaraman, M.L.A.,

(4) Sri B. S. Murthy, M.L.A.,

(5) Begum Sultan Mir Amiruddin, M.L.A.,

(6) Sri Raval S. Krishna Ayyar, Engineer and Contractor,

(7) Sri N. Somasundaram Ayyar, ex-Chairman, Vellore Municipal Council,

(8) Sri Rao Sahib C. Narasimham, Commissioner, Corporation of Madras,

(9) Sri M. B. Chablani, Chairman, City Improvement Trust, Madras, and

(10) Sri Rao Sahib M. G. Padmanabha Mudaliyar, Deputy Registrar of Co-operative Societies.

Sri M. G. Padmanabha Mudaliar was appointed to be the Secretary to the Committee.

In G.O. Ms. No. 2788, Development, dated the twenty-seventh June, 1947, Sri R. D. N. Simham, Town-Planning Expert, attached to the Director of Town-Planning (now Joint Director of Town-Planning) at the instance of the Chairman and Sri Rao Bahadur J. C. Ryan, then Deputy Commissioner of Prohibition (Amelioration) and Joint Registrar of Co-operative Societies (now Registrar of Co-operative Societies) were included in the Committee.

Terms of Reference.

3. The terms of reference issued to us were "*to examine the question of providing increased housing accommodation conforming to approved standards to such classes of people as need accommodation with special reference to the requirements of urban and semi-urban areas and to suggest measures, schemes or works for reducing and removing the housing shortage by the co-ordinated and planned development of all available lands suitable for building purposes.*"

Time Allowed for Report.

4. The Government requested us to begin work immediately and to submit a report within two months. This period was reckoned from the date of our first meeting, i.e., the eighteenth June of 1947, but this being found insufficient was subsequently extended to the sixteenth December, 1947.

Procedure of Work and Meetings.

5. The first meeting which was held in the Committee Room, Fort St. George, Madras, on the eighteenth June, 1947, was inaugurated by the Hon'ble Mr. Daniel Thomas, Minister for Housing. Mr. W. R. S. Sathianadhan, I.C.S., Secretary to Government, Development Department, and Sri Rao Bahadur J. C. Ryan, attended the meeting on invitation. Opening the proceedings, the Hon'ble Minister explained the scope of the work of the Committee stressing the need for a comprehensive housing policy and a long-term programme with a view to solve the housing problem. He also requested the Committee to examine the housing conditions in rural parts and authorized the Committee to tour as they considered necessary for this purpose. At this meeting we determined the procedure of work and discussed the points on which we particularly desired information and the questionnaires were to be issued.

We held a number of meetings and discussed the several points connected with the housing problem and those specifically referred to us by Government and others for consideration. In the meetings held from twentieth November, 1947, to the sixth December, 1947 we considered the draft report and finalized our conclusions and signed the report in the meeting held on the twentieth December, 1947. The dates on which the Committee met and the names of the members who attended the respective meetings are given in Appendix No. I. All the meetings except on the twentieth, twenty-first and twenty-seventh November, 1947, were held in the Government Secretariat Buildings, Fort St. George. The meetings on the abovementioned three days were held in the premises of the Madras City Improvement Trust.

Response to Questionnaires.

6. Thirteen separate questionnaires were issued to individuals, institutions and building trades. Copies of the questionnaires issued are given in Appendix No. II. Details regarding the persons or bodies to whom they were despatched and the number of replies received from each are indicated in Appendix No. III.

In all 477 replies were received. Our questionnaires met with a good response except from certain municipalities and major panchayat boards. The views and suggestions contained in the replies represent an immense amount of thought and labour on the part of all concerned. The Corporation of Madras, municipalities, major panchayat boards, private individuals, big employers and industrial concerns, service associations and manufacturers or stockists of building materials and certain Collectors and Heads of Government Departments have ungrudgingly placed their knowledge and experience at our disposal.

Oral Evidence.

7. Invitations were sent to thirty-one persons representing different fields of experience requesting them to give oral evidence before us. Twelve persons responded to our request by appearing before us and gave valuable evidence. A list of persons who were examined by us is given in Appendix No. IV.

Local Inspection.

8. On the twenty-first of August, 1947, we inspected the workers' tenements provided by the Corporation of Madras in Nariangadu, Conran Smith Nagar, Cemetery Road, Harbour and Bunder Rama Naickan Garden and the workers' colonies constructed by the Buckingham and Carnatic Mills and the middle class houses of the Madras Corporation at Shenoyanagar, Aminjikarai and the Alagappanagar in Kilpauk, a private development under construction.

Acknowledgment.

9. We express our gratitude to the Hon'ble Mr. Daniel Thomas, Minister for Prohibition and Housing, for inaugurating the first meeting. We desire to place on record our sense of obligation to all those individuals, both official and non-official, and institutions who so kindly and promptly furnished their replies to the questionnaires with their valuable suggestions. Our sincere thanks are also due to the ladies and gentlemen who responded to the invitation and gave us evidence, both oral and written. We are specially grateful to the Managing Agents of the Buckingham and Carnatic Mills and to the Commissioner, Corporation of Madras, who gave us every facility in our inspection of the workers' colonies and Corporation tenements and middle class houses respectively. Our sincere thanks are also due to the departments of Government and the Government officers for their assistance in supplying necessary information and particulars required at short notice.

We must place on record our appreciation of the unremitting labour of Sri Rao Sahib M. G. Padmanabha Mudaliar, our Secretary, whose hard work and enthusiasm have contributed not a little to the thorough examination of the problem and our present report. His examination of the problem in connexion with the formation of a co-operative housing society in the Madras City and its thoroughness have been of invaluable assistance to us in examining the problem set to us.

CHAPTER II.

GENERAL ASPECTS OF THE HOUSING PROBLEM.

Significance of Housing

10. Food, clothing and shelter are the essential requirements of human beings. Housing is the primary need of a human family in civilized life. It constitutes the most important part of the physical environment, which continuously influences man's health and well-being. This need is met by building houses of different types to suit individual tastes, requirements and purse. The essential qualities of a house are privacy, comfort, convenience, spaciousness, salubrity, aspect and prospect, cheerfulness and elegance. All the houses built do not possess these essential qualities. Most of them lack one or the other or most of these qualities; for, apart from individual tastes and needs, it is the purse that often determines the type of house one can build. Nor is it within the means of all to construct houses of their own. Most families in urban areas and even many in semi-urban areas are compelled to live in rented houses. And even many of those, who can afford to invest the necessary capital, find it more easy to buy a house than build one, on account of the practical difficulties involved in building a house. Thus, house building in urban and semi-urban areas and the management of house property have formed a profitable investment for private enterprise. House development schemes have all along been sponsored to cater to the needs of the middle and the richer classes. The lower income groups or their needs have not exercised any considerable influence on these schemes either in their financing or in their development. In fact, the term 'housing', in ordinary parlance, is seldom associated with the habitation of the poorer classes, even their hovels or huts. The Government in the Labour Department have attempted to some extent to provide house-sites for the Labour and the Depressed Classes. In the ten districts of West and East Godavari, Kistna, Guntur, Nellore, North and South Arcot, Tanjore, Trichinopoly and Madura, some 68,023 house-sites were laid out and allotted in the inter-war period. How many of them have houses and how many are habitable are problems. The poorer classes are generally left with the sites and allowed to shift for themselves in the matter of providing shelter. The capitalist would prefer to purchase a house-site and lease it out in plots on high rents to poorer classes to put up their own improvised 'housing' rather than construct houses for them for the reason that the investment on the erection of such houses does not give him the yield which he would otherwise secure. The result is that there has been no homogeneous development of housing to cater to the needs or the capacity of all classes.

This is what is described as the practice in Denver, United States of America. "Small-time promoters not missing a trick sold narrow 25-foot lots for as little as \$25, herded 3,500 families into one area alone." Result "While war time shelters could have been torn down at official discretion without Red Tape, this slum can now be cleared only after tedious months of condemnations proceedings and the expenditure of money far beyond the \$25 per lot which the shanty town dwellers paid"—*Collier*.

Importance of Housing in Urban Conditions.

11. As observed by the Bhore Committee, villages with their sparsely distributed population, with the simpler habits of their inhabitants, whose vocations are mainly confined to agriculture and cottage industries, present a less complicated problem than towns with their requirements based on industrial development and populations living under intensely congested conditions. Health, happiness, general manners and morals of the people in urban areas are to a large extent influenced by the conditions of housing. Death and morbidity in urban areas are directly affected for better or for worse by good or bad housing conditions. It is now recognized that overcrowding and slums contribute to crime and delinquency in society. The importance of good, adequate, commodious, sanitary housing in urban life cannot, therefore, be overemphasized.

Housing Shortage.

12. Generally there are two different aspects of the housing question: (1) shortage of housing and (2) the unsatisfactory character of housing from the view point of hygiene and public health. The outstanding feature of housing shortage is that the number of dwellings available is definitely smaller than the number of families requiring them. This feature was noticeable in urban areas even during pre-war normal times. On account of the conditions created by the war, the housing shortage has become more acute. The important

causes that have contributed to the acuteness of housing shortage in urban areas according to our examination of the question may be enumerated :—

(1) The increase in the number of houses has at no time kept pace with the increase of population and especially so during the present quinquennium.

(2) Large number of people from villages have migrated and come to stay in towns in search of more attractive livelihood. Instability in the supply of essential commodities in village parts and hopes of getting better supplies in towns on account of wider-spread and better controlled rationing have induced them to stay on in towns.

(3) Normal building activities have been practically suspended owing to the scarcity and abnormal increase in the cost of building materials and building labour on account of the conditions created by the war; and the large increase in the cost of building sites also has been acting as a definite deterrent. Those, who have suspended building activities, hope for a reduction in wages and a fall in the prices of land and building materials, when conditions return to normal. They are, therefore, reluctant to restart building activities in the present circumstances.

(4) Many of the residential buildings in towns have been converted and utilized as godowns, offices and business premises.

(5) The number of Government offices have increased with their attendant increase in the number of employees, their families, dependants, etc.

(6) There has been an abnormal rush of student population to schools and colleges in the cities and towns in recent years.

(7) The present uneconomic wage structure in villages and the lure of town life with its attraction of better services in the matter of water-supply, medical relief, market facilities and better recreational opportunities such as public parks, cinemas and theatres, hotels and cafes, etc., keep back the people who have already migrated to towns from returning to their villages.

(8) As recognized by the Bhole Committee, the breaking down of the joint family system and families dividing into smaller units on marriage have also resulted in an increase in the demand for housing.

All these causes have increased overcrowding and the growth of slums.

Unsatisfactory Housing.

13. The other aspect relates to the quality and utilization of existing dwellings. Even during normal times the housing conditions did not in general satisfy the minimum standards regarding internal and external equipment, sanitary arrangements, density of occupation, etc. The increase in overcrowding has aggravated this unsatisfactory character of housing still further. Dwellings intended for single families are now shared by several and premises not intended for human habitation are used as dwellings. In Denver "other new comers bought up chicken coops on towns' western outskirts, improvised floors and walls with cast-off lumber, a few even moved into abandoned street cars, blacked out windows, put mattresses on bunks along the car sides and called it home"—*Collier*.

Slums.

14. Our enquiries show that the housing shortage as well as the unsatisfactory character of housing is most acute among low income groups. Citing the case of the Madras City, according to the figures furnished by the Corporation of Madras, as against 180,000 houses needed for the low income groups in the City, only 50,000 are available, while 40,000 houses are available for the other groups against 66,000 houses needed for them. On account of overcrowding, the growth of multiple tenancy has extended to even middle class houses resulting in slum conditions among the middle income groups also. Overcrowding is particularly appalling in industrial areas. The single room tenement is a common feature in these areas. The single room serves as a living room, kitchen and bed room and added to all these, the number of families living in that room is sometimes as many as three or more. The environmental, human, sanitary and health conditions in these tenements and particularly in the slums are such that very heavy mortality and morbidity occur in these areas. Such areas are generally the starting points for the spread of epidemics and communicable diseases. The health of the community is menaced by the existence of these sources of infection. If proper measures are not taken to arrest overcrowding and relieve housing shortage, it may lead to much suffering and misery.

Action Taken by Government and Local Authorities.

15. Administrative action taken to remedy the situation has been confined till now mainly to unco-ordinated and consequently ineffective legislation to provide for sanitary requirements, safety of buildings, town-planning, protection of tenants and prevention of excessive rise in rents. It seems to us that neither the Government nor the local authorities were alive to this problem of housing until conditions became very acute and public consciousness was aroused to such a degree as to demand Government's intervention to

solve the problem. The rent control legislation protected only the existing occupiers stabilising them in their houses and protecting them from any abnormal rise in rents but newcomers continued to suffer for want of houses. Moreover this legislation also aimed at securing a habitation to Government servants in preference to others engaged in less essential services, thus placing the Government servants in a privileged position in relation to the general public. The landlords feel that this legislation has rendered their position insecure as they are denied freedom to choose their tenants and of fixing the terms of tenancy. This legislation has tended to some extent to make capital shy of house-construction schemes and to check the revival of building activity. However, in view of the benefit it has conferred on the existing tenants, limited as it is, we recommend that the Rent Control Act be kept in operation until such time as the measures for relieving congestion are well on the way.

All the measures taken by the State so far have been only of a negative character. They seek only to procure the available houses and arrange to distribute them equitably and secure fixity of tenure. But the houses are in such a short supply that any attempt merely to distribute them, howsoever equitably as human ingenuity can devise, will not solve the problem. The rent control and accommodation laws may only lead to misuse when there is no production and the law of supply and demand is rendered inoperative. Supply woefully short of demand leads to blackmarketing and illegal practices such as what is called "pugree" in Bombay. The need of the hour is *more houses*, in adequate numbers, to meet the requirements. Low rent houses do not yield an adequate financial return to the investor. It is not a practical proposition to expect financiers to be whole hogging philanthropists under such low yields. So, it is the duty of the State, local authorities, etc., to subsidize and promote the production of more and better houses for the common man.

Correct Approach to Problem of Housing.

16. The attitude towards housing has been to regard houses primarily as property and construction of houses as a mode of investment rather than one of providing accommodation. We feel, the correct approach should be to treat housing as a public utility service providing living space and conveniences to different family units of the community consistent with their capacity to pay. Some units of the community—well-to-do classes can provide housing for themselves and may be left to look after their own needs. It is for those who cannot so provide themselves that the public utility service comes into operation; while the ultimate objective should be to make each unit of the community own its own home, it may not be possible to do so under the existing circumstances. It is certainly not our intention to make every family own its home at the place it lives in. Many have possibly migrated to towns temporarily, to earn a living, or as a result of their occupation for the time being. Some families will not be interested in owning houses in towns. But there must be some families in each place permanently attached to the locality; and only in respect of them, the question of owning a home would arise. It is in respect of such families, that, apart from providing them with housing as a service, the secondary object of enabling them to become house-owners will have to be considered. The achievement of this objective by a majority of families is very much to be desired, if not by all, as home ownership would lead to economic and social security. But in the present conditions of the high cost of labour and materials it is not a practicable proposition. For the reasons we have already stated, the provision of housing for the low-income groups will have to be the concern, in whole or in part, of the community and primarily of the State.

Planned Development.

17. Housing should not mean the creation of a conglomeration of buildings erected without planning or the formation of mere mechanical extensions of existing urban centres. It should aim at the development of residential areas in such a manner as to provide for the community, hygienic dwellings in pleasant and healthy surroundings, with facilities for recreational and social activities. Such a development may be obtained, only, if it is properly planned and executed. The planning will firstly be concerned with the equitable distribution of the available land according to the various needs of the community providing for residential and industrial centres, space for broad thoroughfares, parks and gardens, social amenities and adequate area for future development. It is, therefore, necessary to design the lay-out of the land before a housing scheme is launched. It is because such planning has not generally been done that we have disorderly developed residential areas in towns as well as in villages. The Town-Planning Department has attempted something, but it has been greatly handicapped from its inception. It has not exercised the powers to improve an existing town. Its plans only tacked on bits of reasonably laid-out accretions to an unhealthy built-up area. The result has been anything but an organic whole—a hotch potch of bright bits stuck on here and there.

Results of Absence of Planning and Control. Need for Survey.

18. The policy in the past of not planning for an organic development of the entire city or town and the absence of effective control over development have led to one or more of the following evils :—

(a) Inappropriate land use; as for example, commercial or industrial area devoted to residential uses or vice versa. In Madras we have the glaring example of George Town, where there is a jumbling of all sorts of uses.

(b) Marked discrepancy between the owner's ideas of the value of his property and its actual value for its appropriate use.

(c) People in higher and middle social and economic strata moving out to more open areas leaving only the poor and the economically weak in the area once occupied by them. There are several examples of this nature in Madras, where the working classes and the lower middle classes are in occupation of unsuitable accommodation by virtue of this change, the owner continuing to run the property for profit without affecting a change necessitated by the changed conditions. This has also led to the lack of repairs and maintenance, further depressing conditions from a sanitary standpoint.

(d) Dilapidation and decay due to age, neglect, or faulty construction, resulting in the occupation of the property by person of lower income groups.

(e) Overcrowding of land by its more intense use by the owner by successive building operations in order to realize a higher income on his property quite often to meet the demand made on him by higher taxation.

(f) In some cases, the fear of what the neighbours might do with their property, prevents the owner from carrying out desirable improvements.

(g) The liberal policy pursued by Local Authorities in providing greater facilities in outlying areas developed by them while neglecting the older urban areas.

(h) From a survey of the causes of deterioration, it will be seen that while some areas have degenerated into slums and can be easily recognized, others, which are in an incipient stage, cannot be so readily recognized.

Some policy would, therefore, demand a survey of the city or town in its various aspects in order to determine its general conditions and the varying civic condition of its components.

Housing Policy.

19. The unsatisfactory condition of housing has been in existence for more than a generation. Though the problem has become phenomenally acute in the last few years, it has not sprung up suddenly. It, therefore, becomes necessary that measures should be devised not only to ease the situation in the immediate present but also to evolve a comprehensive, long-term policy so as to meet the needs of the increasing population permanently and to prevent the recurrence of shortage of housing as at present. Such long-term policy should have as its objective construction of hygienic houses in sufficient numbers and of adequate size in 'sanitized' areas (i.e., areas provided with hard-surfaced roads, water-supply, lighting, drainage and sewerage), equipped with all the facilities necessary for community life, such as schools, reading rooms, and clubs, markets and recreation facilities such as sports grounds, theatres and public parks.

The Bhoré Committee have observed that "it is the responsibility of the Provincial Government to deal with the problem of housing and executing housing schemes. This responsibility has of course to be shared with local bodies or public authorities such as Improvement Trust. But the Government must be responsible for ensuring co-ordinated progress and for making or encouraging others to make a determined effort to provide more and better houses for the people." We endorse this recommendation of the Bhoré Committee.

Combined activity by the Government, Local Authorities, Improvement Trust, etc., will be necessary for the discharge of this responsibility and it will also be necessary to stimulate co-operative, commercial and private enterprise side by side with those of public authorities by affording financial aid, technical advice and rigid enforcement of better standards. Co-operative and private enterprise is likely to be forthcoming in the case of middle income groups but are not likely to be helpful in the case of lower income groups without generous outright State Aid.

Factors affecting Housing Schemes.

20. In promoting large scale housing schemes referred to above the following factors will have to be taken into consideration :—

- (1) The availability of land;
- (2) the provision of streets, water-supply, drainage and other utilities to serve the common purpose;

(3) The production of building materials and fittings of the required quality and at reasonable costs and their distribution at reasonable prices, avoiding uneconomic competition or unduly inflated prices;

(4) cost of execution of the schemes and their maintenance when completed; and

(5) where necessary, provision of public transport.

Building Land.

21. All vacant areas cannot be considered suitable for the development of housing. Building land should be sufficiently high in level to promote proper drainage and to prevent water stagnation. Its soil should be suitable for construction of dwelling houses and to sustain plant growth. Housing area should not be far away from centres of work, as the cost of transport added to the cost of housing would reduce the standard of living of the residents. It should be possible to provide for the housing area, such essential services as good water-supply, proper drainage and sanitation, street lighting, etc. The area should be such as not to promote development in a ribbon fashion along highways, railway lines, river banks, etc. It should be of adequate size to form a self-contained regional town, complete with a variety of industries and agricultural belts and full facilities for social life. Even if all these conditions are satisfied, it is not desirable that every such available land should be built upon. It is necessary in any planning, that a certain proportion should be reserved for future development and a substantial portion reserved as parks, lawns and open spaces to serve as the 'lungs' of the populated areas.

Though large extents of land suitable for building are available, considerable difficulty is experienced in acquiring them for building and their cost also is prohibitive. The obstacles which stand in the way of utilizing these lands need to be removed and the cost brought down to a reasonable level by legislation, if necessary. In respect of some classes of land, like temple lands, it may be advantageous if they are taken on lease for long terms (say 99 years), instead of purchasing them, and used for erection of buildings as it will reduce the over-all cost of building considerably. This policy may be adopted forthwith.

Building Materials.

22. The materials used for building dwelling houses are numerous and vary from one locality to another. While clay burnt bricks are generally used in the plains, laterite stones are used on the West Coast and granite stones are used in the Central districts. Mud plastering is prevalent in the country-side and lime or cement plastering prevails in urban areas. The availability and the cost of these local materials are determined by the conditions which obtain in the localities. Other materials particularly iron and steel, timber and cement are important articles of country-wide and inter-national trade. In the case of these materials regulation of imports, control of production and distribution by the Central Government determine their availability and their costs. The universal difficulty now confronting builders is not only the high cost of all essential building materials but also their short supply. It is necessary to step up production all round and for that purpose an all-out effort should be made. It is also necessary to rationalise the building methods by the adoption of the necessary technical reforms in the production of building materials as well as in their utilization. The possibility of utilizing prefabricated houses and prefabricated housing panels and metallic houses in our country requires careful study. They are mostly of foreign origin. Any large scale use of these materials will entail in this hour the question of the availability of foreign exchange for the purpose, the safeguarding against our country's economic stability being endangered by large scale imports of built houses and a whole host of other results. There are, however, certain essential parts in a building which are capable of large scale production, such as window and door-frames, panels, etc., and building furniture such as hinges, door bolts, latches, locks, holfasts, etc. The possibility of their production should be examined and measures taken to achieve their large scale supply. The Bhoré Committee have drawn the attention to the Survey made by the Ministry of Works in the United Kingdom of the American practice in design and construction of building materials with a view to secure—

(1) increased speed in output,

(2) reduced building costs,

(3) improved standards of equipment and finishing, and

(4) improved conditions for labour.

They have recommended that an enquiry on similar lines in this country is important and should be started as soon as possible.

We are in full agreement with this recommendation.

A pertinent observation in the *Scientific American* of August 1947, would be of value.

" This is not a paragraph about prefabricated houses. Rather, it is about a movement to standardise—prefabricate, if you will—the materials which go into home construction. A national association of building materials dealer aims to have cinder blocks, bricks, lumber, building supplies of all kinds, cut or shaped to standards at mills and factories, thus eliminating much of the tremendous waste of time and materials which now occurs at the building site."

' Prefabricated houses, except in emergency and other isolated cases will probably never fill the nation's practical needs *plus* aesthetic desire for housing. Conventional methods of building homes is a national disgrace to our vaunted industrial efficiency. Standardised materials, if really standardised, hold some promise of relief from an intolerable situation "

Labour.

23. The wages for both skilled and unskilled labour employed in the building trade have risen to two to four times over their pre-war level throughout the Province. Further the workers employed in the building trade, as also in the production of building materials such as bricks, are in a very disorganized state. Progress in building construction work, especially by private builders, is attendant with frequent interruption, on account of difficulty in securing essential building materials, so that building labour is not assured of continuous employment. Likewise, workers employed in the building trade attempt to keep a finger in every pie on account of the frequent interruptions due to short supply of materials and transfer themselves to other works when there is an interruption in one. They thus frequently absent themselves on account of the insecure tenure of their employment and such irregularity on their part contributes to the delay and adds to the cost of building. Further more, the building trade is largely in the hands of unqualified labour contractors. They do not have any of the equipment necessary for taking up building construction work, its expeditious and economic application of labour; and naturally these contractors are of all kinds—good, bad and indifferent. But few, if any, are sufficiently reliable to carry out the construction of a building economically. Some of the public authorities like the Corporation, Public Works Department and Railways have their own approved lists of contractors; but even these are mostly labour suppliers and the technical guidance is furnished by the paid staff of the organization. Technical qualifications prescribed for getting into the approved list of contractors are rarely enforced and hardly practicable. We have not got an independent Engineering Profession in the country, as they have not obtained the requisite recognition or encouragement, and none has been developed. The number of agencies properly equipped with qualified men and labour-saving appliances and equipment in this Province of some 50 millions of population is some three or at the most four. Mechanisation appears to offer a way out—but it will require an entire re-orientation of outlook and the size or magnitude of the work determines whether mechanisation is economically feasible or not. Mechanical plant is, as a rule, expensive in this country on account of the need to import it and involves all the additions to cost, consequent on such import.

Finance.

24. As has been discussed later, a house with the minimum standard of accommodation will at present cost Rs. 5,000 to build and equip with the normal amenities. It should fetch a rent of Rs. 25 to make it a financially economic proposition. As this is not feasible with income groups below Rs. 200 per mensem, private capital is not attracted to building schemes which cater to the needs of the low-income groups. Public financial aid is required before it can make it possible to make any headway in easing the housing conditions for the low-income groups. Even when a private person wants to have a house built for himself, he generally has to meet part of the building costs by obtaining mortgage loans. In view of the prohibitive costs of materials and labour, unless the loan is made available on easy terms, he is deterred from house building. Financial aid in the shape of cheap credit facilities is necessary in such cases.

Housing Needs.

25. Correct statistics relating to building and house construction are not available. The census reports relate to houses of every description and size from one-room tenements to large mansions. Even temporary structures and hovels are included under houses so long as they are occupied by human beings and have each an independent entrance from the street. It is, therefore; not possible to arrive at a precise estimate of

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the housing needs of the province. The following figures are, however, from the replies to the questionnaire :—

	Numl
(1) Madras City	1
(2) Municipalities (69)	1
(3) Major Panchayat Boards (182)	1

These figures are, however, incomplete as all have not replied to the questionnaire even where they have replied, they hardly represent the correct position of things as a large number of habitations included in the list as in existence are unjustly judged from any standard. But the figures suffice to indicate the magnitude of the problem. In the joint report of the Director of Public Health and the Town Planning Expert on Town-Planning, Housing and Slum clearance, it is stated that the number of houses required for municipal areas is 86,000; in other urban areas 51,000; and in rural areas 325,000. They have also observed that besides these 462,000 new houses, 1,600,000 additional houses may be necessary to replace the existing unsatisfactory ones. Thus, in all, about 2,000,000 houses are said to be necessary to house the population of the Madras Province properly. They have not reported as to how the housing should be distributed. It seems to us necessary that some general principles in respect of the distribution of housing among the different classes of people should be laid down. Government servants should be given first priority so as to keep down their interference with the housing of the common man to a minimum. Municipalities and public institutions come next; industrial areas also will have to be given high priority. The need for low-income groups will have to be taken next in the order of preference. There is a class of people such as beggars, pavement dwellers, etc., who have no right to housing. Provision of housing for these classes also is an immediate necessity. As for the middle and richer classes, they can pay economic rent on the houses they need and so their housing schemes can be left to co-operative enterprise or private corporations to develop. The only help they may need, is the supply of building materials, provision of building land and such technical help as may be needed for development on right lines and exemption from taxes for a limited period.

Housing for the Workers.

26. It is generally agreed that the employers should contribute a substantial part towards the provision of housing for their employees. In this respect, it is our consideration that the Government should set an example by providing housing for their employees whose income is below Rs. 200, if not for all their employees; and quasi-Government establishments like municipalities and local boards should follow as a close second. These should practise what they preach.

The difficulties confronting the problem of housing agricultural labour are of their own kind. The agricultural workers are not in general attached to particular places nor all the year round. Many of them are, though on a humble scale, peasant proprietors. The landlords under whom they work are again not in a position to house them satisfactorily. Provision of hygienic housing for the agricultural workers by their employers is thus not possible, not to speak of the uneconomic character of such provision. The number of landholders who hold adequate areas to form an economic farm is infinitesimal percentage of the total population; and even in these cases there is the lurking fear that an apparently progressive landlord is likely to use provision of housing as a lever for payment of uneconomic wages. While this fear may not be wholly unfounded, it should be recognized that unless this is looked upon as a business venture, the landlord will care to put money into it. It is a case of "Heads I win, tails you lose," with the agricultural labour at present. It must, however, be admitted that if the workers in the fields are provided with houses, agricultural operations can be satisfactorily carried out, leading to increased production. So far the Government has attended to the provision of sites to put up their huts and that too for Harijans. Improvement was attempted in the quality of the hut itself. The principal cause of the absence of sanitation is the scattered nature of their dwellings. The prime need of the agricultural labour is therefore planned housing development and the creation of a factory environment for such development. This should be the responsibility of the State. The bigger landholders can be made to provide housing for their workers. The State should render them every direct and indirect aid for this purpose, similar to what is proposed for the industrial workers. The help should be both financial and otherwise. The financial aid should be in the form of subsidies, cheap credit, etc.

The other big employers, like the Railways and Industrial establishments, should likewise arrange for the housing of all income groups, drawing an income below Rs. 200, aided by the State as recommended later in this report. For the poor and the unskilled, housing should be provided by local authorities aided by the State and run on a service basis.

CHAPTER III.

PROCEDURE ADOPTED FOR SURVEY OF EXISTING HOUSING CONDITIONS.

Objects of Survey.

27. Before proceeding to recommend the main lines of an effective housing policy, we need an estimate of the magnitude of the problem with which we are faced. The statistical figures we called for were mainly intended to provide us with data for determining the magnitude of the problem. The objective of our survey is to promote the building of houses in sufficient numbers with a view to place them within the reach of all sections of the population especially the poor and the middle classes of the community, though not to the exclusion of the richer classes who are in a position to look after themselves. In short, it is to realize a social ideal which is to provide a separate house for every family, howsoever poor, to abolish overcrowding, to eliminate slums and other unhealthy areas, so as to ensure a healthy and vigorous physical environment for the entire population, eliminate foci of infection and improve the hygiene of the society as a whole. The data cover the information needed not only to assess the magnitude of the problem, but to eliminate all bottle-necks in house construction not excluding the price and distribution of house building materials which go to swell the price of construction and the provision of trained labour which is in such woeful short supply.

Procedure Adopted and Collection of Data.

28. For collecting the necessary information from the local bodies we issued questionnaires to the Madras Corporation, to all the 81 municipalities and all the 355 major panchayat boards. We did not address the minor panchayat boards of which there are 6,757, as it was not within our purview to survey rural housing; nor was it a practical proposition to collect the information from these minor panchayats in time for analysis and incorporation in this report.

Besides other particulars the following statistical data were called for: (1) a census of population and of houses, and density of occupation per house as in 1941 and in 1946, (2) classification of population according to different income groups, (3) classification of houses according to rental valuation, (4) number of families living in their own houses and number living in rented houses, (5) a census of slum quarters, (6) census of homeless people, and (7) estimate of additional houses according to income groups. Sixty-nine municipalities and 182 major panchayat boards only sent their replies to our questionnaire. I.e., 85 per cent of the municipalities and 54 per cent of the major panchayat boards responded. Even among those who have replied to our questionnaire some have not answered all the questions, some have furnished scrappy information, while some others have given irrelevant and incorrect figures which have had to be rejected. It has, therefore, not been possible to compile comprehensive statistics relating to them or gain a correct and complete picture of the housing problem in the urban and semi-urban areas in its entirety. Despite these limitations we wish to observe that the figures furnished have enabled us to draw general conclusions on all the main issues with which we are concerned.

Rural Areas

29. Though the survey of rural housing conditions was not within our purview under the terms of reference, we have, however, considered it desirable to make recommendations on this subject in Chapter XII. We programmed to visit a few places to have a bird's eye view of the conditions prevalent in the different parts of the Presidency in regard to the quality, quantity, existence of slums and the area of habitable space available in the ryots' and workers' houses in villages. But our tour had to be abandoned as the Government's modification of the itinerary submitted by the Committee was not regarded as of any practical value.

CHAPTER IV.

HOUSING IN THE MADRAS CITY.

Position of Housing.

30. The number of houses in the City of Madras (within the old Corporation limits) during the period 1921-46 and the density per house are furnished hereunder :—

Year.					Number of houses.	Average number of persons per house.
1921 (census)	64,621	8
1931	73,845	9
1941	87,888	9
1946 (estimated figure given by the Corporation).					90,000	14

We would emphasize that the census figures afford an incomplete idea of the position, as the total number given not only includes bungalows and mansions but also one room tenements and temporary structures of flimsy construction, in conformity with the existing classification of a dwelling which means a unit possessing an independent entrance. The number also includes non-residential units put to commercial use, etc.

The houses which have been assessed to property tax for the years 1941 and 1946 are as follows :—

1941	68,084	
1946	66,014	(Reduction is due to reclassification and larger number of houses exempted from taxes.)

We have been informed by the Corporation that the figures given above should be regarded as approximate, as correct figures could not be gathered by the Corporation in the short time at their disposal. These figures do not include properties which are not assessed to property tax by reason of their falling below the taxable level. The houses which are not taxed are hutments with a rental value below Rs. 36 per annum. It is clear that some 24,000 out of the 90,000 houses in the City are of such a value and are more or less hovels which need replacement.

We find that during the decennium 1921-31, 9,224 new houses were constructed. During the same period, the population of the City rose by 1·20 lakhs. In other words, house building activities led to an increase of housing on the basis of one additional house for an increase of 13 persons in the population of the City. We are, therefore, entitled to come to the conclusion that the housing position in the City deteriorated during the decennium 1921-31 leading to an increase in overcrowding, with the result that the average number of persons per house rose from 8 to 9. During the succeeding decennium (1931-41) 14,043 new houses were constructed in the City against an increase in population of 1·30 lakhs. In other words, housing accommodation increased at the rate of one house for every nine persons of the increased population. The rate of increase in the number of houses during the period more or less kept pace with the increase in population. During the quinquennium 1941-46, however, only about 1,600 houses were constructed against an increase of 4·58 lakhs in the population. This works out to one additional house for every 286 additional persons and increases the density of occupation in Madras to one house per 14 persons.

Density and Its Relation to Family Income.

31. The density of occupation per house appears also to depend on the size and income of the family. In studying the family income, it is the family and not the individual that is important in relation to the standard of living. The standard of life is more often than not conditioned by the size of the family and its income. A larger percentage of expenditure on clothing, housing and miscellaneous items such as education, recreation, etc., is therefore a sure indication of an improved standard of living. The following table shows the average size of the family and the average monthly income in different cities :—

Cities.				Average size of the family (in persons).	Average monthly income.		
					RS.	A.	P.
Bombay	3·70	50	1	7
Ahmedabad	4·05	46	5	0
Sholapur	4·57	39	14	10
Nagpur	4·33
Jabulpur	3·76
Rangoon (Burma)	3·01	58	8	3
Madras	6·03	37	5	11

It is probable that a certain amount of this disparity in income is accounted for by the differences in the ruling prices in various localities.

The above table discloses that while the size of an average family is the largest in Madras, its income is the lowest. It will also be seen that the average size of a family is 6.03 in the City. We are, therefore, adopting for our investigation 6 as the average size of a family. It is made up of a husband and wife, 3 children and a dependant such as a sister, brother, sister-in-law, brother-in-law, father, etc. If, on the other hand, the average density of 5 persons per family prevalent in the rest of the province be adopted the housing schemes will become too expensive.

Density of Population in the City.

32. As we have already shown, the average number of persons per house in the City of Madras has risen from 9 in 1941 to 14 in 1946 or an increase of over 50 per cent. It is, therefore, clearly seen that the City of Madras has already reached a dangerous density. It is probable that a certain number of persons may return to other urban and rural areas when conditions return to normal, but normal growth will by then have outstripped the rate of return and it is unlikely there will be any marked reduction of total population at any time in future. It is obvious from the above that the additional housing has not kept pace with the growth of population during the last twenty-five years and this has been greatly aggravated during the past five years when house building activities in the City deteriorated rapidly and practically ceased due largely to the conditions created by the war.

General Description.

33. Going deeper into the matter, we find that overcrowding in the City of Madras is a common feature. It is reported that in one house thirteen families live, eight in the front yard and five in the back yard. Such instances are by no means rare. On an average in the houses occupied by the lower middle-class people, at least four to six families reside in each house while the accommodation can at best be regarded as sufficient only for one or two families. In some cases, it is stated, each family occupies one room which serves as a kitchen, living room and bed room all in one. One can imagine the appalling effects of overcrowding in such conditions in which proper ventilation and sanitation must be completely absent. The atmosphere in the house gets stuffy by cooking and living in the same room in almost every room in the house and these rooms are used for all purposes. Smoke emerging from the kitchen-cum-dining-cum-living rooms which have no chimneys or smoke outlets, permeates the premises and causes nuisance to all the tenants. No wonder respiratory diseases are common. Such conditions of overcrowding in houses in the City, especially in thickly populated parts such as Triplicane and Chintadripet, Georgetown and Monegar Choultry areas, are common and the need for urgent remedial measures to relieve the congestion by providing more houses on low rents is one of imperative urgency.

Growth of Population.

34. The population of the Madras City within the old Corporation limits has been growing with enormous rapidity during the last five years. The following figures show the growth of the population of the City during the period from 1921 to 1946 :—

Year.	Population.	Increase.
1921 census	5.27 lakhs	..
1931 „	6.47 „	22.7 per cent
1941 „	7.77 „	20.1 „
1946 „ (as gathered from the City Rationing Office.)	12.35 „	59.0 „

The classification of population according to income groups in 1946, collected from the City Ration Office is as follows :—

Group number.	Monthly family income.	Population.
	RS.	LAKHS.
I	0 — 30	6.75
II	31 — 50	2.27
III	51 — 100	1.60
IV	101 — 200	0.95
V	201 — 500	0.47
VI	501 — 1,000	0.19
VII	Over Rs. 1,000	0.12
	Total	12.35

While the increase during each of the two decenniums 1921-31 and 1931-41 has been about 20 per cent, that during the last quinquennium 1941-46 is about 60 per cent. This abnormal growth is mainly due to the large ingress of people into the City from other

parts of the Province. Out of the present population of 12·35 lakhs (1946), according to the figures furnished by the Corporation, about 9·01 lakhs or nearly 75 per cent of the total population belong to low income groups in which the monthly income of a family is Rs. 50 and less; 1·6 lakhs enjoy an income of over Rs. 50 but less than Rs. 100; 95,000 with income of over Rs. 100 but below Rs. 200; and only 78,000 have incomes over Rs. 200. This reveals that the increase of population is particularly large among the poor and the lower middle classes who have flocked to the City in large numbers in search of more attractive occupations as opportunities for their employment in the City became wider with the starting of a number of new works of military importance, industries and offices during the war years.

Classification of Houses According to Rental Value.

35. The classification of houses according to rental valuation for 1946 as furnished by the Corporation is given below :—

Group number.						Annual rental value.	1946.
						RS.	RS.
I	Below 120	19,253
II	121 to 360	13,752
III	361 to 720	11,002
IV	721 to 1,200	5,501
V	1,201 to 1,800	5,534
VI	Over Rs. 1,800	10,972
							<hr/> 66,014 <hr/>

From what follows, it will be seen, that one-half of the number under group II is taken as having a rental value of Rs. 120 to Rs. 240, i.e., 6,876.

The houses available under a monthly rental value of Rs. 10 constitute 29 per cent of the total number of houses and those under Rs. 30 work out to 21 per cent. It is self-explanatory that the number of houses with low rental values that are required by the poor and the middle-class families who comprise the bulk of the population is far too inadequate.

Estimates of Housing Needs.

36. There are about 90,000 houses in the old limits of the City. Of these, only 66,014 have a rental value over Rs. 36 per annum, and the remainder are just hovels and slum dwellings requiring to be replaced. And of these, only 26,129 (19,253 plus 6,876) are available for the low income groups with an income of less than Rs. 200 per mensem. Taking the average number of persons per house at 6, the existing number of houses provides accommodation for 156,774.

Taking the average density of occupation at 6 persons per house, we need about 150,300 houses for income groups I and II whose monthly incomes fall below Rs. 50. As against this, there are about 23,986 houses which are not assessed to property tax. Most of them are hovels or hutments which cannot be reconditioned. They need to be displaced and new ones built according to the requirements of minimum standards of housing. So, they may safely be ignored for our purpose. The estimate of new housing needed for the two groups I and II will therefore be 150,300. For income group III (Rs. 51 to Rs. 100) we require (1·60 lakhs ÷ 6) = 26,666 or about 27,000 houses. As against this there are 19,253 houses. Additional houses needed for the group will be (27,000—19,253) about 7,700. Similarly for Group IV (Rs. 101 to Rs. 200) we need about (0·95 lakh ÷ 6) = 16,000 houses, against which there are 6,876 houses falling under rental valuation below Rs. 240. So new additional housing needed for this group will be 9,000. Altogether additional housing required the poor and the lower middle classes will work out to 167,000.

Estimate of housing needs according to income groups :—

Income group.	Additional houses needed.
I and II (below Rs. 50)	150,300
III (between Rs. 50 and 100)	7,700
IV (between Rs. 100 and 200)	9,000
	<hr/> 167,000 <hr/>

As regards groups V to VII, against the requirements of 13,000 houses, we have 34,402 houses available of which over 20,000 houses have multiple tenancy sharing with other groups. Assuming that these are covered by obsolescence and houses in disrepair, it will be safe to assume that we shall need 165,000 houses for the satisfactory housing of the present population of the City.

It will be seen from the above, that the question of housing in the Madras City is largely one of providing houses in the minimum standard group at the uneconomic rental level.

Industrial Concerns.

37. The Corporation has stated there are 12 industrial concerns each employing more than 200 workers operating within the Madras City limits. Figures relating to the total number of workers employed by all the concerns and the extent to which housing has been provided by them are not available. Particulars have, however, been received from five of them, viz., (1) Messrs. P. Orr & Sons, (2) The Madras Port Trust, (3) Caltex (India), Limited, (4) Messrs. Binny & Co., and (5) The Buckingham and Carnatic Mills. The total number of workers employed and the number of quarters provided for them are given below :—

	Group number.	Monthly income.	Number of workers.	Houses provided.
I	0— 30	1,450	19
II	31— 50	2,059	4
III	51—100	15,281	442
IV	101—200	1,434	37
V	201—500	8	..
			<hr/> 20,232	<hr/> 502

It may be seen from the above statement that the number of houses provided for the workers represent only 2 per cent. Besides the above, the Corporation, the Madras and Southern Mahratta Railway and several big employers employ a large number of workers in respect of whom information is not available. We may be certain, however, that the number of workers employed in the major industries in the City will not be less than 30,000. The Buckingham and Carnatic Mills have under their employ 14,562 persons. Only 478 tenements are available for housing their employees. We have visited two of their centres, where colonies have been constructed for the workers. We found that though the quality of the houses for workers is not up to the standard the rent charged is just nominal and the workers' colony is on the whole kept clean, there being special care-takers employed for the purpose and their enterprise is commendable and needs further expansion.

Slums.

38. There are more than 200 *cheries* and several other slum quarters. Most of the people in these places have temporary huts without plinth. There were, in 1934, 189 slums, consisting of 15,942 huts with a population of about a lakh according to the census taken by the Corporation in connexion with the enquiry by the Ladden Committee, an *Ad-hoc* Committee appointed by the Madras Corporation in 1933. It is a function of the Improvement Trust to take measures to clear them and provide amenities for them. The one lakh people in the *cheries* require some 17,000 houses to lodge them. As a matter of immediate relief, the representatives of the *cheri* dwellers agreed that if the authorities can provide roads, drains, sanitation and water-supply and also raised plinths with impervious floors on which to put up their hutments, it will meet the present needs for a few years. As this will cost only one-third of the cost of proper housing, it is commended for execution with immediate effect.

Census of Homeless People.

39. A census of homeless people or pavement dwellers was taken in 1934 and there were more than 10,000 such persons in the City. This figure must by now have necessarily increased. These represent daily wage earners, such as coolies, cart-pullers, rickshaw pullers, etc., and the indigent poor including beggars. The beggar homes in the City run by the Corporation and the charitable institutions accommodate only about 800 people, the rest being in the streets. The problem is getting complicated by the influx of refugees.

Mortality.

40. The death-rate per 1,000 of population in the City was 22.67 in 1942 and rose to 37.59 (0.66 cholera, 10.22 respiratory diseases, 26.71 other causes) in 1943. The increase in the death-rate in 1943 as compared to 1942 must have been due to large ingress of population into the City from all parts, following the collapse of the Japanese army and the elimination of all hazards of war from the City. This resulted in the phenomenal overcrowding and congestion in the City, and the other results followed. The death rates for 1944, 1945 and 1946 were 36.19, 32.71 and 29.74 respectively. They disclose that the death-rate can still be considerably reduced by health measures.

The economic loss to the society involved in the birth and rearing of large number of children, who do not survive to make any contribution to the community, in sickness and disease and the resultant debility of a large proportion of the workers making for poor physique and efficiency and in early death with the consequent reduction of the earning years of their life must be heavy. Any step howsoever taken, which would prevent the waste, would have had an appreciable effect in increasing the wealth of the nation. We would assert that a courageous attack on these problems is a necessity and has to be faced with determination and with vigour.

Deterioration in Public Health.

41. Health is a matter of cardinal importance to the worker himself but it is scarcely less important to others directly or indirectly associated with industrial development and national progress. The housing now available to the workers is of the meanest description. The natural tendency of the worker to live in close proximity to his work so as to avoid long walks, loss of time in transit, fatigue after the walk and possible bus charges for the better paid, compels him to submit to exorbitant rent charges for hopelessly inadequate and indifferent accommodation near his work resulting in the overcrowding.

Town-Planning Schemes

42. There are 14 sanctioned town-planning schemes for the City in different stages of execution. There are 23 other areas for which town-planning schemes have been notified by the Government and the preparation of schemes is in various stages. After the extension of the City limits, the Government have been requested to notify for 17 more areas. These are, as stated already, development of local open grounds brought about by the scarcity conditions and general inflation, and cater to the needs of middle and upper classes only. They are accretions to a City already grown haphazard and do not follow any master plan. We understand one such plan under preparation.

Town Extension Schemes.

43. The old limits of the Madras City extended over an area of 29.81 square miles. The City has been recently extended by the addition of an area covering 19.83 square miles bringing the total area to 49.64 square miles in all. The Saidapet Municipality, Sembiam Panchayat and 15 other villages originally included in the Chingleput district have now been added to the City limits. Besides encouraging planned housing development in the extended City limits, we should mention that within the City itself there are a number of open spaces which can be explored for housing, such as the two Government House compounds (Chepauk gardens and Guindy Park).

Model Houses.

44. The Corporation has constructed 1,758 model tenements and houses in different localities within its limits. Except in a few cases, supply of drinking water to these model houses is by common taps, one or more being provided for each block. Drainage by underground sewage system is provided in certain parts only. In other unsewered areas, open drainage system is prevalent. Nightsoil is removed by lorries and disposed of at a central pail depot in Korkupet. Some of the tenements are provided with electric lights. The scheme is a laudable venture in view of the conditions which existed at the time of its inception; but the localities are poorly kept and the housing itself is entirely out of date with reference to the accepted minimum standards of accommodation.

Tenants and Owner Residents.

45. The Official Hand Book on the Madras City published by the Corporation of Madras in 1939 gives the proportion of tenants to owner residents as 4 : 1. The proportion must be very much higher now as a very large number of new families have come to stay in the City with no increase in the construction of new houses.

Rent Control.

46. One immediate effect of the house shortage in the City was the abnormal rise in house-rents. With a view to prevent landlords from raising the rents for houses indiscriminately and frequently evicting the tenants in order to get higher rents from new tenants, and to enable the Government to bring down the rents to reasonable level, the Government passed the Rent Control Order in the year 1941, under the Defence of India Rules. The general exodus out of the City in 1942 made these rules nugatory but the subsequent influx into the City when it was declared free from danger made the position very serious. The people, who went out of the City during the evacuation of 1942, found the conditions of living in the mufassal so unattractive that they not only marched back when the danger was removed, but also brought with them a large population attracted by the rosy picture painted by them to the mufassalites. The house famine became more

and more serious and in February 1945, Government passed the House Accommodation Control Order under the Defence of India Rules by which the landlords were required to intimate to the Controller of House Accommodation any vacancy occurring in their premises, so that the Controller of House Accommodation might himself allot the houses to those in need according to the urgency of the need of the applicants. The House Accommodation Order worked for a time, but it did not prove effective as the number of vacancies reported by landlords was so negligible that it bore no proportion to the ever-increasing number of applications for allotment of houses. The Controller was unable to provide accommodation even to a small fraction of the applicants who applied to him for help. Complaints and protests regarding the working of the Orders were so numerous and insistent that Government decided to repeal the House Accommodation Control Order in November 1945. Nor was the Rent Control Order an unmixed blessing. It benefited only the older population, stabilizing them in their homes and protecting them from abnormal increases in rent, but, the later arrivals continued to suffer for want of accommodation. The landlords were inclined to consider, that these measures of control rendered their position insecure, in so far as their operation denied them the freedom of choice of their tenants and the liberty to fix the terms of tenancy. It prevented them from availing themselves of the operation of the law of supply and demand and earning an equitable increase commensurate with their other expenses which had increased considerably. Disputes between the landlords and the tenants and the large increase in the cost of upkeep often lead to indifference on the part of the former resulting in the houses falling into a state of disrepair. In certain cases even the usual annual whitewashing was not done. The dwellings were thus neglected, which has made the position of the tenants in many cases almost intolerable. With the lapse of the Defence of India Rules at the end of September 1946, the Government passed the Rent Control Act of 1946, under which the Government took power to control the rents, to take over all houses or portions of houses carrying a monthly rent of Rs. 30 or more, which fall vacant after the Act came into force, to secure priority of accommodation to the homeless Government servants wherever possible. The limit has now been proposed to be changed to Rs. 15. It is reported that from that date on which this Act came into force till the 31st of January 1947, 795 applications for accommodation were received from Government servants, while, only 120 cases of vacancies were reported; of these 118 were allotted up to the end of January 1947. Even this Act, it must therefore be admitted, has not relieved the situation to any appreciable extent. The Act can only control distribution of available houses but cannot allot houses which do not exist. These relate to the needs of Government servants only. The need of the general public must certainly be much greater. The measures taken are primarily emergency arrangements, devised to meet a situation of house famine and increasing rents. They are short-term in scope and urgent in character and represent merely a negative contribution to the solution of the problem. It is no wonder they did not touch the fringe of the main problem, viz., housing 11.56 lakhs out of the total population of 12.35 who could not pay Rs. 30 and over for the controlled houses. The problem still remains without a remedy.

Part Played by Co-operative Building Societies in the City.

47. In the Madras City there are 12 co-operative building societies. All of them have confined their activities to acquiring building land collectively and parcelling it out to their members as building sites, and financing them for the construction of buildings and arranging to recover the loans in equated monthly instalments spread over a period of 20 years. Financing has, however, been the principal activity of these societies. They do not even develop the land by laying roads and providing other amenities as a co-operative venture. They have been left to be tackled by the Corporation. Till the 30th of June 1946 they borrowed from Government an amount of Rs. 20.60 lakhs carrying interest at rates not exceeding $4\frac{1}{2}$ per cent and passed them on to members at a rate of interest not exceeding $4\frac{3}{4}$ per cent, the half a per cent margin being taken by them to cover the charges for working the scheme. Only 576 houses have been constructed by the members so far. The total value of the houses constructed is estimated at Rs. 28.51 lakhs and the average value per house Rs. 5,000 in round figures. Four of them are employees' societies, one is for a particular community, Maharashtras, and the rest are open to the general public. The jurisdiction of the societies other than the employees' societies extends to the whole of the old municipal limits excluding Tondiarpet, Chintadripet, Georgetown and Triplicane divisions. A new line of development has just been launched, viz., the Madras Co-operative House Construction Society which aims at constructing houses for its members. Details about this are given in a later chapter.

Water Supply.

48. Protected water is being supplied to the Madras City from the storage available at the Red Hills lake and Poondi Reservoir which are nearly 13 miles and 32 miles

away respectively from the City. The water from the Red Hills is brought to Kilpauk by gravity through a masonry conduit about 7 miles long. At Kilpauk the water is sterilized and then pumped into the distribution system, a balancing tank being provided to even out peak loads.

Of the new areas added to the Madras City with effect from 1st April 1946, only Saidapet and Sembium have protected water-supply from infiltration galleries. But the supply is considerably restricted and house connections are not given freely in these areas. In the City limits, on the other hand, any house bearing an annual valuation of Rs. 60 is given individual water connection.

The capacity of the scheme per diem is 25 million gallons and 25 gallons per head per day for a total population of one million. The population has already exceeded this figure by 25 per cent.

By carrying out certain improvements, the existing system can be made to meet the growing demand to the extent of nearly 32 to 35 million gallons per day. The works in progress and under contemplation are the construction of a second conduit from the Red Hills to Kilpauk, installation of rapid mechanical filters, installation of additional pumping trunk main for South Madras and improvements to the City distribution system.

We, however, note that the contemplated supply will provide water-supply to a population of 12·5 to 14·0 lakhs on the basis of a supply of 25 gallons per head per day during years of average monsoon and that restriction of water-supply is implied in the case of failure of the monsoon. We would also point out the works under execution or contemplated, while providing a supply adequate to meet the needs of an increase in population, do not provide for any increase in the supply per capita or in residual pressures. It is also a matter for consideration whether, with growing industrial activity in the City and under the tropical conditions which prevail in Madras, a *per capita* allowance of 25 gallons can be regarded as really adequate. We are led to this observation by the fundamental consideration that an adequate supply must form the basis of a service like water-borne sewage and must therefore be regarded as a prerequisite in any large development scheme of housing activity such as we envisage or even of any attempt to provide sanitary conditions in an attempt to improve upon the low level of health prevailing in the City.

Sewerage and Drainage System.

49. Underground and storm-water drains have been provided for the major portion of the areas coming under old City limits. The total length of sewers laid up to 31st March 1947 is 322·44 miles and the length of storm water drains completed is 58·76 miles. Proposals for sewerage the extended areas are being worked out.

Electricity.

50. There is a system of electric distribution within the municipal limits, but all the houses are not connected. There is no information regarding the lowest income group of houses which are provided with connections.

Roads.

51. Madras City, being the capital of the Province, has good main roads—some macadamised—some bitumen or concrete surfaced—and a large percentage of the roads are hard-surfaced roads. This would not apply to residential areas. There are residential and other parts of the City which contain public and private roads, which are unsatisfactory and which have not yet been taken up by the Corporation. The Corporation will do well to expedite the taking over of all these roads and to bring them to a satisfactory condition, for many of these private roads the cost of such works has already been paid for. The spectacle of carts sinking axle-deep in some of the recently developed areas and some not so recently developed areas is pretty bad and calls for early action.

We understand that there is a scheme for a canal connecting the Cooum, north branch, with the Springhaven basin for the purpose of flushing the Cooum, relieving the congestion at the basin wharves avoiding the double handling of cargo and eliminating the spectacle of a long continuous stream of manhauled carts along some of the main streets and roads of Georgetown and the consequent heavy congestion. We recommend that the scheme may be taken up by Government and proceeded with if feasible.

Other Amenities.

52. With regard to the provision of other amenities such as social service and medical help, the necessity for keeping pace with the expansion of housing should receive adequate consideration.

Middle Class Housing.

53. Persons drawing monthly incomes ranging from Rs. 51 to Rs. 200 may be considered as lower middle classes and those getting an income between Rs. 201 to Rs. 1,000 may be deemed to come under upper middle classes. The former constitute 26 per cent of the total population in the City. About 17,000 new houses are required for the lower middle classes. These groups, at the present time, when inflation has pushed up the prices, cannot afford to pay the prices and rents demanded for houses of the kind they require. The provision of houses for them at cost or with a minimum of profit calls for attention of the public building corporations or co-operative institutions treating the business as a public utility. But no such enterprise which has to avoid losses, even if it is not required to make profits, can undertake the housing of those who cannot afford to pay a rent at least equal to the gilt-edged rate of interest on the capital invested. State subsidy of a substantial character to cover the deficits is the prime need of such development.

Housing for the Poor and the Labour Classes.

54. The poor classes consist mainly of the industrial workers, casual labourers, and wage earners among whom may be included all the unskilled labourers. These constitute the low income families which comprise workers whose income ranges from Re. 0 to Rs. 50 a month. They constitute the bulk of the population of the City and represent about 80 per cent of the total population. This class of the community requires about 150,000 new houses.

The question of provision of houses for the workers was examined at length by the Royal Commission on Labour (1931) and more recently by the Industrial Housing Sub-Committee of the Standing Labour Committee of the Government of India. These bodies have made a number of recommendations for the proper housing of the labour classes and have laid the responsibility for the housing on the State, the local authorities and the employers. It is learnt that the Government of India have agreed to subsidize schemes for housing of the labour classes to the extent of 12½ per cent of the capital cost subject to a maximum of Rs. 200 per dwelling unit and subject to the condition that the Provincial Government also subsidize the schemes to an equal extent. We consider that this subsidy is based on the assumption that the cost of constructing a tenement will not exceed Rs. 1,600. Our examination of the question of costs of construction, to which we refer in this report, has convinced us that, at present costs, a unit cannot be constructed at a cost less than Rs. 5,000.

Dormitories for the Homeless and Pavement Dwellers.

55. It is unfortunate that we should have a large number of homeless people scattered over all parts of the City. We consider that these beggars must be suitably accommodated outside residential areas in the City. Begging in public should be prohibited. The aged, the sick, the infirm and the blind should be fed and clothed, free, by the community. They must be housed in asylums, chatrams and Annadhana samajams. The number of such institutions is inadequate at present and there is urgent need for more. Children of beggars should be separated from adults, housed, educated and cared for in orphanages. More of such orphanages should be opened. The able-bodied should be assigned work or taught some trade according to their capacity in work houses, run by public bodies. Those who are willing to work will not stay on, in the work houses for long. Those, who are unwilling to work, should be taught to work or made to feel that life as a beggar is hard. Poor houses must be built at the expense of the Government or local bodies and contributions may be collected from charitably inclined rich people. The financial responsibility of providing accommodation for the homeless beggars must be shared among the Government, the concerned local bodies and municipalities. While we would stress the responsibility of the Government and the municipalities in the elimination of beggars and in providing for their housing, we consider that private charity may be encouraged as much as possible. Begging must first be made a penal offence and rescue houses provided when the Act is brought into force.

Hostels for Single Men and Women.

56. There is a considerable part of the population composed of unattached or single men and women, boys and girls. They belong to all classes, viz., students, workers, businessmen, etc. They also need housing and should be catered for. All the hotels and hostels in the City are full, and these people find it extremely difficult to secure accommodation. Hostels for such single men and women, boys and girls, are a distinct necessity and require to be established in the City at convenient places with suitable accommodation and amenities such as common halls, dining rooms, common kitchens or canteens. It will, however, be necessary to segregate the sexes and different age groups in each sex.

Temporary Structures.

57. A suggestion was made to us that temporary and economic cottages may be provided to relieve the tension of the present acute shortage of housing in the City as has been done in the case of military camps and during Congress Sessions for accommodating huge numbers within a short time. It has also been suggested that Nissen huts which are reported to be available for sale with the military and which are expected to last for four or five years might be made use of in putting up temporary structures whenever possible so as to give relief to the homeless population of the City. It has further been suggested to us that Government may accommodate their own staff in the compounds or vicinity of the respective offices in which they are employed with the aid of such temporary structures, which might relieve not only the acuteness of the housing problem but also the transport problem. We learn that the Bombay Government, in view of the present abnormally high cost of construction and urgency of giving relief, propose to build houses designed to last for a period of from four to five years where climatic and other conditions permit the construction of this type and to set apart a sum of Rs. 20 lakhs for about 3,000 temporary houses based on the estimate that a tenement of this type cannot on an average cost more than Rs. 750. We have given careful consideration to the suggestions made to us and to the Bombay Government's proposal. We consider that essential amenities such as water-supply, drainage and sewerage are the pre-requisites for any scheme of housing development; and when these are to be provided the question of immediate relief on the lines of the military does not appear practicable. Further, though the poorest classes such as beggars and pavement dwellers might perhaps take to these temporary structures as an alternative to living and sleeping on the pavement and foot-paths, the generality of the people in the City to whatever income group they may belong would not take to such dwellings. We further consider that the expenditure in putting up such accommodation would be wasteful and would far outweigh the doubtful benefit it might confer. We are, therefore, not in favour of the construction of temporary structures by the State. We have, however, suggested that a number of hostels may be constructed immediately for the accommodation of the students of the several colleges, and allotted in the first instance to the Government servants of low income groups. These offices may later shift into residences built specifically for them, as they become ready and the hostels transferred to the colleges to which they are appurtenant.

House Property Management.

58. The workers' tenements of the Madras Corporation compared very unfavourably in the matter of maintenance with the workers' colony run by the Buckingham and Carnatic Mills. The workers' colonies belonging to the Buckingham and Carnatic Mills are looked after by their Welfare Officer. There seems to be no such agency in the Corporation. The unsatisfactory condition of the tenements of the Corporation is mainly due to misuse and mismanagement. We have no doubt that tenants display wilful neglect. It is, therefore, necessary that rent collectors employed by the Corporation should be trained in welfare work. They should not only be responsible for the collection of rent but should also help in the education of tenants, inculcating in them habits of cleanliness by creating a friendly and sympathetic atmosphere and by tactful handling, so as to ensure a clean and orderly maintenance of these tenements.

Miss Octavia Hill with a band of workers all belonging to good society took up house management of the tenements in London, collecting the rents on behalf of the landlords and helping and advising the tenants to keep the tenements clean and sanitary. By personal association and movement with the occupants she achieved improvement of the dwellings to the immense advantage of all concerned. The same is the case with the New York housing schemes. There is no reason to believe that what was achieved successfully in the West should not be attempted in India. There is urgent need for women's associations in the City to help the Government and local authorities in this direction and we would commend harnessing these organizations to this channel of activity.

Limits of the City and Thinning Out of Overcrowded Areas.

59. The Housing Panel of the Greater Bombay Scheme have observed in their report about Bombay that one of the troubles of cities and particularly metropolises is their gigantism. This is not a desirable feature and the general tendency towards an unlimited growth of a city needs to be checked by wise planning in order to avoid the metropolis turning into a chaotic and unwieldy megalopolis. We concur with this view. The population of the Madras City within its old limits is estimated at 12.35 lakhs while that including the extended city limits is estimated at 15 lakhs. While the recent extensions of an area equal to two-thirds of the old city, the population in it is under a fifth of the population within the old city. It is, therefore, desirable that measures

should be taken to distribute the population more evenly by encouraging the population to move out from overcrowded areas into new colonies in undeveloped areas such as Adayar, Kodambakkam, Guindy, etc. A part of the population may even be encouraged to move to suburban areas like Tambaram, etc. Certain industries like the beedi industry and match industry, oil mills, the soap industry, etc., and cinema studios could also with advantage be taken out of the city. There are ideally situated places available for the cinema studios in the Kodambakkam-Poonamallee-Sriperumbudur roads about three or four miles outside the City limits capable of being attractively developed as a homogeneous centre for the film industry. The Penitentiary should be shifted out of the City and the area of about 11 acres occupied by it should be used for locating Government offices or as a park.

Removal of Milch Stables from the City.

60. It is understood that a Master Plan is being prepared for Greater Madras which provides for the zoning of business localities, industrial areas, residential parts, etc. In this connection we would suggest that milch cattle stables which are located in the midst of residential areas and are responsible for insanitary conditions should be moved out of the City. This will facilitate allocations of lands for the dairy industry and may, in course of time, enable the creation of a satellite dairy town and scattered dairy belts conveniently situated along suitable arterial roads or main railway stations at adequate distances from residential, commercial or industrial districts to avoid insanitary conditions and yet serve the needs of the City in the matter of milk supply. In the past, failure of dairies has been brought about by inadequacy of fodder and the high cost of transport of fodder from distant places. We appreciate the fact that mismanagement may have also contributed to failure of dairies in the past, but we believe that the fundamental need of the dairy industry is the availability of fodder and grazing grounds which are best provided on the fringe of the City if an adequate supply of milk is to be ensured. We consider that sewage from the City can be profitably applied for this purpose.

Repeal of Government Buildings Act, 1899, necessary.

61. The Government Buildings Act IV of 1899 provides for the exemption of the buildings and lands situated within the limits of a municipality which are the property, or are in the occupation, of the Government from the operation of municipal building laws. We consider that there is no need for the continuance of these exemptions and that Government buildings and Government building operations should be subject to the same rules and regulations as are required to be complied with by private bodies. We recommend, therefore, that this Act of 1899 should be repealed in the larger interests of the community. A glaring instance of the adverse effect of this Act on the health of the community is afforded by the failure of the Government to provide the Penitentiary with flushout latrines and their failure to connect its drainage system with the underground sewerage of the City—while they should have set the example by being the first to introduce the system.

Inclusion of Fort St. George Area in the Corporation.

62. We learn the Fort St. George area together with the glacis is excluded from the jurisdiction of the Madras Corporation. We consider that they should be included in the City limits and all Government offices in the City should be located in the Fort area or in close proximity thereto, thereby helping to relieve the congestion in the other parts of the City and make it easy for anybody who has to transact business with more than one Government department without having to romp about the whole city in this City of long distances, adding to the traffic congestion.

CHAPTER V.

HOUSING IN MUNICIPAL TOWNS.

63. According to the Census Report of 1941 there are 407 towns in the Madras Province. They include the Madras City, all the 81 municipalities and most of the major panchayats. We have dealt with the Madras Corporation in the previous Chapter. Out of the 81 municipalities, 69 have sent their replies to our questionnaire. The remaining 12, viz., Calicut, Tinnevely, Rajahmundry, Tanjore, Vellore, Kurnool, Cuddapah, Nellore, Hindupur, Walajapet, Palni and Cochin have not sent their replies. A table showing the population and the number of houses with density of occupation

per house and percentage of increase for the years 1941 and 1946 in respect of the 69 municipalities is given in Appendix V. Maps showing the fully built-up area, sparsely built-up area and availability of land suitable for building, etc., were received from 50 of these municipalities are enclosed. (Annexure I).

Growth of Population.

64. The census of 1941 shows that the population in the 69 municipalities was 30.25 lakhs. The population in the 69 municipalities (from which only particulars have been received) was 28.81 lakhs in 1941 and 38.38 lakhs in 1946, showing an increase of 33.2 per cent during the quinquennium. The rise in the population in the municipalities ranges from zero per cent to 81.3 per cent. Tiruppur reports the highest percentage of increase of population (81.3 per cent) during the period from 1941 to 1946 while Hospet reports no increase at all. The increase is well over 50 per cent in the 8 municipalities, viz., Tiruppur, Erode, Palghat, Bezvada, Anakapalle, Tirupati, Guntur and Vizagapatam. The increase ranging from 40 to 50 per cent is noticed in 5 municipalities, viz., Madura, Mangalore, Karur, Pollachi and Ootacamund. In 12 other municipalities the increase of population is between 30 to 40 per cent. They are Salem, Coimbatore, Mayavaram, Gudiyattam, Dindigul, Villupuram, Vizianagaram, Prodattur, Adoni, Bellary, Dharapuram and Tiruvarur. In the following 17 municipalities, viz., Srirangam, Cuddalore, Conjeeveram, Trichinopoly, Chicacole, Tiruvannamalai, Narasaraopet, Masulipatam, Ellore, Gudivada, Kumbakonam, Tadpatri, Virudhunagar, Anantapur, Udipti, Kodaikanal and Chingleput, the increase ranges between 20 and 30 per cent. The increase is less than 20 per cent in the remaining 27 municipalities. Among these 27 municipalities the average density of persons per house is more than 6 in the following: Vaniyambadi, Udamalpet, Bodinayakkanur, Tenali, Coonoor, Hospet, Tellicherry, Tirupattur and Cannanore. It may be of interest to note that in the following 11 municipalities where the population registered an increase of over 20 per cent during the period 1941-46 the average density of persons per house is less than 6: Chicacole, Narasaraopet, Masulipatam, Gudivada, Adoni, Tadpatri, Virudhunagar, Tirupati, Prodattur, Udipti and Tiruvarur. It is noticed from the distribution of population according to income groups that there has been a general rise in all income groups and that it is most marked in the lower income groups.

The statistics confirm that the towns and cities have acted as gigantic magnets attracting the rural population who are lured to the towns by the better amenities and recreational facilities which they provide, higher wages which obtain in them due to the conditions created by the war and the greater certainty with which consumable supplies can be obtained in them. Congestion in towns is, however, not uniform. Overcrowding is acute in industrial towns due to the establishment of new industries. Further there is the floating population in certain towns which are pilgrim centres. Here congestion is seasonal. In these places choultries and dharmasalas must be able to give convenient accommodation to meet such temporary influx of population. The common factor of overcrowding in cities and towns is the general difficulty experienced by the poor and the middle classes. Figures show that in municipalities where the increase in population during the last five years exceeded 20 per cent, the average density per house is more than six and the existing housing accommodation is inadequate for the increased population. They, therefore, stand in immediate need of housing development.

Position of Housing.

65. The total number of houses in the sixty-nine municipalities in 1941 and 1946 was about 460,543 and 552,700 respectively. While the increase in population in the last five years was 33.2 per cent, the percentage of increase in the total number of houses during the same period was 20 per cent only. Averages so computed may convey the impression that the housing position in municipal areas is not so very unsatisfactory, but a detailed examination of the figures clearly shows that the housing shortage in larger towns is acute.

It may be mentioned, however, that in certain municipalities there is no housing shortage as revealed by the figures furnished by them, e.g., Gudivada where the increase in the number of houses was 53 per cent while the increase in the population was only 26 per cent and the density per house fell from 7 to 6. The other municipalities which fall in this category are Sivasaki, Ongole and Periyakulam where the average density per house does not exceed five. In Coonoor and Tellicherry where the percentage increase in houses was greater than the percentage increase in population, the density per house continues to be as high as 10 and 8 respectively.

The deficit in the number of dwellings is not solely due to the population movements caused by the war, for, even in 1941, there was a considerable shortage of houses and we are led to the conclusion that the circumstances following the war have merely aggravated the conditions prevailing before 1941.

For the Province as a whole the average density of occupation per house according to the census of 1941 was 5.12. The figure compared with those for the three previous census years is as follows:—

1941	5.12	1921	5.08
1931	5.05	1911	5.29

They rather indicate a slight but gradual improvement in housing conditions up to 1931 and a comparatively quick deterioration in the decennium ended 1941. Figures alone are not always the sole index of overcrowding.

The housing shortage may be deemed to be acute if the average density per house exceeds six persons. From Appendix No. V, it may be seen that forty-one municipalities come under this classification. The remaining twenty-eight municipalities have a density of six persons and below. While we have adopted a density of six persons per house as a workable proposition, we consider that before long the progressive disintegration of the joint family system would create conditions necessitating the housing of a family unit consisting of four persons.

Tenants and Owner Residents.

66. Information regarding the number of families living in their own homes and those living in rented houses was received from 35 municipalities only. The total number of families living in these 35 municipalities is 3.27 lakhs of which 1.78 lakhs live in their own houses and 1.50 lakhs live in rented houses. The proportion of tenants to owner residents in these municipalities is about 5 to 6, i.e., for every 6 owner residents there are 5 families living as tenants. Thus the municipalities compare very favourably with Madras in respect of owning homes.

Influence of Rent Control on Housing.

67. The Madras Building (Lease and Rent Control) Act, 1946, is in operation in all municipalities except in (1) Anakapalle, (2) Rajapalayam, (3) Bimlipatam, (4) Tenali, (5) Dindigul, (6) Gudivada, (7) Chidambaram, (8) Dharapuram and (9) Palacole. According to section (2), the Madras Buildings (Lease and Rent Control) Act, 1946, applies to the City of Madras, all municipalities within the Province and such other areas as may be notified by the Provincial Government in the *Fort St. George Gazette*. It is not clear why the Act has not been extended to the abovementioned municipalities. As in the case of the metropolis the Rent Control Act is considered helpful to the tenants to a certain extent; vacancy in respect of only a few buildings is brought to the notice of the Rent Controller and those in need of houses pay sometimes even double the rent clandestinely to secure accommodation. It has, however, hampered the enthusiasm for investment in building activity. The Gudivada Municipality states that the house-rent control orders administered by the First-class Magistrates have not had the desired effect in respect of control of house rents.

Estimates of Housing Needs.

68. It is not possible to give a correct estimate of the extent of the housing needs in each municipality. On the basis of 6 persons per house the additional number of houses required in the 69 municipalities works out to about 131,916 as shown in Appendix V. This figure is only a rough estimate and it has to be assessed with reference to the actual requirements in each municipality by a detailed survey.

Slums.

69. From the information given, it is noticed that there are over 28,164 slum quarters in the 69 municipalities referred to. Even here correct information is not available, and different municipalities have applied different standards for slums. However, the statistics furnished are illustrative of the conditions which prevail. Improvement of conditions in slums is only possible by a liberal subsidy for housing and controlled construction. At the same time slum dwellers will have to be educated in the art of living and maintaining the houses and surroundings in a sanitary condition.

Homeless Poor and Beggars.

70. Statistics available under this classification are not sufficient to permit of a comparison of the magnitude of the beggar problem in relation to the total population of the entire Province. Many poor people are reported to have no houses of their own and they occupy temporary thatched sheds erected on poramboke lands, road margins

and vacant sites belonging to private persons or the Government or the Municipality; some of them even live without any roof over their heads. They just squat wherever possible. Quite a considerable number eat what they can and occupy and vacant pial or pavement in the towns or live under trees in villages. In one village with 260 families that was surveyed by our Chairman as many as 125 families had no houses of their own.

Model Houses.

71. The Madura Municipality has built six colonies for municipal Harijan employees. All the colonies have electric lighting, protected water-supply, common bath room and flush-out latrines which are either connected to the underground drainage system or disposed of through septic tanks.

In Ootacamund there are six types of model houses, which are utilized as quarters for the municipal staff. The dwellings are stated to be not comfortable. Nor do they appear to satisfy the minimum requirements of a model house. These quarters consist of a single room 10 feet by 10 feet or 10 feet by 8 feet with or without a small verandah in front.

The Coonoor Municipality has constructed some model tenements for the poor people. This is commendable.

In the Narasaraopet Municipality, type-design quarters for the occupation of Municipal Public Health Employees have recently been constructed. Each house consists of a main room measuring 12 feet by 10 feet with a verandah 6 feet wide on both sides to be used as kitchen and frontage respectively. In continuation of the verandahs, 10 feet vacant space is left in front and rear of each house to be used as an open yard. For housing municipal inferior staff house sites at concessional rates have been granted wherein the employees have constructed thatched houses measuring 300 square feet. These huts are built to a type design. Adjoining the peons' colony, the municipal staff colony is constructed where there is accommodation for housing 80 employees. The plots are uniform in size and it is hoped that they would be built upon to a uniform standard.

The example set by some municipalities cited above and by the Corporation of Madras referred to previously deserve mention. We recommend that they may be copied by other municipalities with advantage. But we must express our opinion that the housing provided so far cannot by any means be regarded as satisfying adequate standards and should be altered so as to conform to the standards suggested by the Public Health Sub-Committee.

Town-Planning Schemes.

72. In four municipalities, viz., Madura, Rajapalayam, Chittoor and Anantapur, it is stated that there are proposals for extension of the municipal limits.

The Inspector of Municipal Councils and Local Boards has stated that 76 municipalities have so far taken up Town-Planning Schemes and that there are 106 schemes under execution. Besides, there are 23 schemes under consideration by the Government and 229 under preparation. These generally aim at regulating development in planned areas and in some cases acquiring, laying out and selling house sites to build upon subject to the usual municipal laws and building codes. They are mainly land development schemes without any actual development. One municipality for instance, which introduced a Town-Planning Scheme in 1919, is yet to provide water-supply, drainage and but for the hard laterite of the locality it would have had no road worth the name although all the houses have been constructed long ago. All these schemes, at best, touch the fringe of the problem, for, none of them caters to the needs of the poor man. Arbitration proceedings for the levy of betterment contribution, acquisition of land for road and other purposes and lack of technical staff besides other causes seem to delay the execution of Town-Planning Schemes. We suggest that the sanction and the execution of Town-Planning Schemes should be expedited. There are laws in all the municipalities dealing with the prevention of overcrowding and the observance of elementary rules of hygiene. But authorities have shown little regard or no interest in their enforcement. The Bhoire Committee have observed that municipal authorities in general fear to risk their popularity with the electorate which accounts for the laxity in the enforcement of the laws relating to hygienic housing. This attitude on the part of a municipality must change radically if housing conditions are to improve in its area. Appellate privileges to elected bodies depending on individuals' franchise must be naturally subject to political influences. It should be eliminated for the proper executive exercise of social and ameliorative laws.

Housing for Industrial Workers.

73. There are big industrial concerns employing more than 200 workers in the following municipal areas :—

(1) Guntur, (2) Srivilliputhur, (3) Salem, (4) Tiruppur, (5) Palghat, (6) Mangalore, (7) Rajapalayam, (8) Udumalpet, (9) Masulipatam, (10) Sivakasi, (11) Gudiyattam, (12) Ellore, (13) Dindigul, (14) Gudivada, (15) Coimbatore, (16) Hospet, (17) Todpatri, (18) Virudhunagar, (19) Tuticorin, (20) Negapatam, (21) Madura and (22) Coimbatore. The workers' housing in them is reviewed below :—

(1) *Guntur*.—About 20,000 people are working in four factories. They live interspersed with the general population occupying every available vacant plot of land. There are no separate colonies for the workers.

(3) *Salem*.—There are two mills employing 2,060 labourers. Sixteen per cent of the workers (about 300) in one mill, i.e., Jawahar Mills are provided with quarters. The remaining 84 per cent and almost all the workers in the second mill, viz., Rajendra Mills live in the adjoining villages and to a small extent in the town. There are 59 houses in the colony provided by the mill referred to above and the population housed therein is about 200. No house building programme has been undertaken by either of the industrial concerns.

(4) *Tiruppur*.—There are two mills and 4 ginning factories which employ about 4,450 workers. It is stated that hygienic houses have been provided for the workers but no details about them are given.

(6) *Mangalore*.—There are 18 big factories and workshops besides several tile factories, beedi factories, presses and workshops. The total number of workers in all the above concerns would approximately be 5,000. No housing for the workers has been provided either by the (i) management of the Industrial units or (ii) by public bodies or (iii) by private capitalists.

(7) *Rajapalayam*.—There are two mills within the municipal limits and three on the border. There is no housing provided for the workers except about 50 quarters for the employees of the belt area mills.

(8) *Udumalpet*.—There are two mills which employ 2,067 workers. A scheme of housing for the workers in one mill is under contemplation.

(9) *Masulipatam*.—There are two companies employing 700 and 200 workers respectively. The National Chemicals Company has provided quarters only for its wholetime staff.

(10) *Sivakasi*.—There are three match factories which employ 735 workers in all. There is no housing scheme for the workers.

(11) *Gudiyattam*.—There is one spinning factory which employ 900 workers. The management has provided 50 huts which accommodate about 200 people.

(13) *Dindigul*.—There are three mills, two ginning factories, two sugar factories and one enamel factory. Besides seasonal workers there are 1,400 workers employed throughout the year. There is no housing scheme for these workers undertaken by the employers.

(14) *Gudivada*.—There are 16 rice factories employing about 100 to 150 workers in each. No housing is provided for the employees by any of the managements. Some live with the general population and the rest in separate slum areas.

(15) *Coimbatore*.—There are six textile mills, employing nearly 12,000 workers and four other Industrial establishments employing about 2,000 workers. Three of the textile mill have provided housing for 125 workers which accommodate 416 souls.

(16) *Hospet*.—There is one sugar factory, by name, the India Sugars and Refiners Company, Limited, which employs 327 workers on a permanent basis and about 520 on a temporary list. There is a colony for the staff and the workmen consisting of 29 houses for the former and 30 houses and 13 sheds for the latter. The total population in the colony is 236. The remaining workers live in the town for want of accommodation near the factory. If lands are available, the management proposes to build more quarters.

(19) *Tuticorin*.—There is one major mill, viz., The Madura Mills. It is a spinning mill employing about 5,000 workers. Besides this there are 4 cotton ginning factories, dholl factories, and fibre factories employing smaller number of workers. The industrial workers live interspersed with the general population. No housing colony has been provided for them by the employers excepting the Madura Mills Company. Even the Madura Mills Company have provided 40 houses only accommodating about 200 workers. It is reported that a comprehensive housing scheme is under preparation by the Mills management to house their employees.

(20) *Negapatam*.—The Indian Steel Rolling Mills located in this town employ 491 workers. Only 14 houses have been provided by the Mills housing about 70 persons and the rest of the workers live interspersed with the general population.

(21) *Madura*.—The total number of workers employed in the mills and factories may roughly be estimated at 10,000. Excepting a co-operative colony sponsored by the Madura Mills in Harveypatti referred to later in the report the rest live interspersed with the general population. There is no industrial housing plan contemplated at present by any industrial establishments or by the municipality.

There is no housing scheme for the workers in (2) Srivilliputtur, (5) Palghat, (12) Ellore, (17) Tadpatri and (18) Virudunagar municipalities.

It will be observed that in general no attempt on any appreciable scale has been made to house the workers either by the employers concerned or by the local authorities and even where some attempts have been made, they are too feeble to be of any effect on the housing conditions of the workers.

Water-supply.

74 Protected water-supply is available in 37 municipalities. In a few municipalities schemes are under contemplation or investigation. The capacity of the schemes varies from 2 to 25 gallons per diem per head. The existing supply in none of the places is capable of supplying any additional population without effecting improvements.

Drainage System.

75 *Madura City* has got an underground drainage scheme for the thickly populated area on the southern bank of the river Vaigai. The area on the northern bank of the river has at present no drainage scheme, open or underground. Even on the south of the river, there are several areas which are not sewered by the existing underground drainage scheme. It is being arranged to carry out an investigation for a comprehensive system of drainage to the entire City.

In Ootacamund underground drainage for nearly half the town and individual septic tanks or open drains for the other half have been provided. In Salem, open drains connected to underground drains are under construction for half of the town. In Bellary open drains draining to a sewage farm and used for cultivation is current. In some towns, individual soak pit system for disposal of drainage is in vogue. In some, a few cemented drains exist. In some others, there are no paved drains; only katcha earthen drains are available. In Chittoor a part of the town has been provided with underground drainage system. In other portions of the town, open drains and soak pits are being used. From the information available it is observed that several municipalities have no drainage systems. Twelve municipalities have not replied and we have no information about them.

Electric Distribution.

76. Electric distribution system is prevalent in almost all municipalities excepting a few, e.g., Palacole and Tadpatri. Even where electricity is available, all the houses are not electrified. Approximately 10 to 15 per cent of the houses have electric connections. The minimum rental value of houses that have been so far connected varies from Rs. 72 to Rs. 200 per annum.

Land development as housing colonies should first provide the essential community needs such as protected water-supply, sewage system and roads before houses are constructed.

Environments also play a very great part in any housing system. Housing does not merely consist of providing space with mud wall raised all round and a roof but connotes inclusion of certain conveniences and amenities for comfortable and healthy living of the population. This aspect does not appear to have been considered by the municipalities.

Availability of House Building Land.

77. Large stretches of vacant land suitable for erecting houses are available in most of the municipal areas and in their vicinity. Only two municipalities, viz., Chidambaram and Palacole, have no such land. Open spaces, most of which are included in the Town-Planning Schemes, are quite suitable for the purpose. Besides, it is suggested that the Government waste lands and municipal patta lands on the outskirts of towns might be utilized for house building. The level of some of the lands might have to be raised and drained before construction.

In Mangalore, unlike the east coast towns, there are mostly garden houses with large spaces around each. It may not be possible to secure lands in the town all in one block with an area of more than five acres for development into house-sites. In the three town-planning schemes contemplated for the town it is proposed to secure a number of blocks of lands covering an area of 100 acres each. It is expected that these areas would provide housing for 4,000 families.

Acquisition of Land for Building Houses.

78. Purchase of land is considered the best investment and real property; and people who have amassed wealth and who own the lands have no necessity to sell them. They consequently demand high prices and it is beyond the capacity of the common man to purchase them. Most of the lands in Srirangam are inam lands and it would be difficult to get them except through acquisition. It is recommended as a general measure that vacant lands must be acquired and sold to the public on a rational distribution basis as house-sites for building houses.

Control over Land Values.

79. The price of land has risen high. It varies according to its situation in industrial, commercial or social centres of a town. In places, where town development schemes are in progress, the rise in the cost of land has been marked. The prices vary from Rs. 200 to Rs. 4,500 per ground and compared to the value prevailing in 1939 they have risen from 100 to 400 per cent. With a view to bring down the cost of land so as to be within reach of a large number of the public, it is suggested, that the value of land might be controlled by suitable legislation. This view is accepted by most municipalities. It is not shared by Bellary, Palamcottah, Mayavaram and Narasaraopet municipalities, who are not in favour of any legislation to control the price of building land. Those municipalities, which favour control of land values, suggest fixing the prices at a level of 12½ per cent to 50 per cent over those prevailing in 1939.

The Wage Factor in the Cost of a Building.

80. Due to the increase in the general level of prices and the conditions created by the war, labour conditions have changed radically. On the one hand wages have risen inordinately and on the other, such labour, as is available, is neither efficient nor economic. House-building calls for specialized workers. After a prolonged lull in building activities the existing supply of labour is insufficient to cope with the arrears of building programmes. The rise in the wages must result in an increase in building costs. Any reduction in these rates does not appear to be likely in the near future. The rates of wages for skilled or unskilled workers appear to be more or less uniform throughout the Province.

Price of Building Materials.

81. Building materials are in short supply and expensive. The price of local materials, such as bricks, tiles, stone, lime, sand, etc., is determined by local conditions. Other materials like timber, iron and cement are not easily procurable. Hard wood species like jackwood, vengai, pillamaruthu and similar classes of countrywood are available. It is mentioned that Malabar and Nilgiris could meet the demand of teakwood up to 10,000 c.ft. per month. It is suggested that the Forest department could increase the supply by a more thorough and systematic working of the forests and by the erection and operation of lumber mills reducing them to sizes. In any expansion of the activities in this direction, measures would have to be taken to safeguard against inefficiency in conversion such as what took place in the working of the Russelkonda and Beypore Saw Mills. Transport facilities such as availability of railway wagons for carrying timber from Malabar and Godavari are necessary. Cement has to be obtained from factories, located in a few places, on permits based on a system of priority. Evidence shows that where stone is available, stone masonry is cheaper than brick masonry.

Part Played by Co-operative Building Societies.

82. The part played by the co-operative housing societies in the Province is indicated in detail in Chapter XI. Here, we shall examine the possibility of forming such societies in the municipal areas. Opinion is practically unanimous regarding the benefits of these societies. Such societies are already functioning in 31 municipal towns. There are possibilities of forming more such societies in other centres. The Masulipatam Municipality suggests that if the Government would grant loans also for the purchase of sites the societies would be popular. The Tiruppur Municipality suggests that, if these societies provide facilities to advance money for additional construction to be made on sites which are partially built, it would help to relieve congestion.

Provision of Housing by Municipalities and State Aid.

83. There is a great demand for house accommodation for low income groups who are unable to pay economic rents in most of the municipal areas at present. It is, however, doubtful if rent-free housing can be provided for them. Municipalities have expressed that they have no surplus money for utilization on housing schemes. They are willing to raise loans if the repayment is spread over a long period.

CHAPTER VI.

HOUSING IN MAJOR PANCHAYATS.

Distribution of Population : Urban and Rural.

84. The distribution of population between urban and rural areas according to 1941 census is shown in the table below :—

Province.	Percentage of population.	
	Urban.	Rural.
India as a whole	13	87
Madras	16.	84
Bombay	26	74
Bengal	10	90
United Provinces	12.5	87.5
Punjab	15	85
Bihar	5	95
Central Provinces and Berar	12	88
Assam	3	97
Orissa	4	96
Sind	19.7	80.3
North-West Frontier Province	18.2	81.8

It will be seen from above table that Madras has 16 per cent of population in urban areas, Bombay, Sind, North-West Frontier Province which are more urbanized than Madras, about 26 per cent, 19.7 per cent and 18.2 per cent, respectively, and the whole of India, 13 per cent. It cannot, however, be said India is as urbanized as other countries.

It is also observed from the census reports, that the percentage of urban population has shown a steady increase in the last half a century.

Density in Other Provinces.

85. In this connexion, it may be interesting to note the densities obtaining in other provinces to enable comparison with this Province. The following table shows the average density of occupancy per house during the years 1941 and 1931 in the different provinces in India :—

Province.	Density per house.	
	1941.	1931.
Madras	5.1	5.1
Bombay	4.7	5.0
Bengal	5.4	5.1
United Provinces	5.0	4.8
Punjab	5.3	4.8
Bihar	5.2	5.3
Central Provinces and Berar	4.8	5.0
Assam	5.1	4.9
North-West Frontier	5.5	4.9
Orissa	4.6	..
Sind	5.6	5.2
Ajmer-Merwara	6.4	4.6
Andamans and Nicobars	6.0	5.2
Baluchistan	5.4	..
Coorg	5.1	5.0
Delhi	4.9	4.6

The position of housing in this Province compares unfavourably with Bombay, the United Provinces, the Central Provinces and Berar, Assam, Orissa and Delhi.

Urban and Village Density compared.

86. The statistics relating to rural areas reveal that the density of occupation per house in villages has remained more or less constant owing to depletion of population by migration to towns. We consider that housing shortage is not so acute in the villages as in the towns. What is, however, urgent and of utmost importance in the rural areas is that of providing essential amenities, recreational and social, and of improving the standard of housing generally. We hold the view that the lower density of occupation obtaining in rural areas should not form the basis for the solution of the problem of urban housing. Generally speaking, the density of occupation in urban areas is on the upgrade and the shortage of urban housing therefore demands prior and immediate consideration.

Growth of Population.

87. From the replies received from the 182 major panchayat boards it is seen that the total population in 1941 and 1946 was about 18.80 and 23.22 lakhs, respectively. The increase in population during the quinquennium in the 182 major panchayat boards represents 24 per cent which is less than the growth of population in the municipal towns where the increase has been over 33 per cent during the same period. The increase, however, varies from one board to another and ranges from zero to as high a figure as 88.2 per cent. The highest reported is that of Vuyyur with 88.2 per cent increase. Watrap, Nattarasankottai and Kariamangalam have reported no increase in population while Kanadukathan reports a fall in the population by about 5 per cent between 1941 and 1946. The rise in population of over 50 per cent is noticed in 21 panchayat boards, between 40 to 50 per cent in 24 panchayat boards, between 30 to 40 per cent in 24 places, between 20 to 30 per cent in 38 places and below 20 per cent in the remaining 75 places. As regards the distribution of population between the different income-groups, evidence shows that the increase is the greatest among the low-income categories. Besides the normal causes, the urban population has swollen by a marked influx of the rural population into towns due to the starting of new industries, development of trade, formation of new offices, war measures requiring a large personnel paid at high rates, steady income and more fully controlled and equitable distribution of supplies at fixed prices. This movement of population from villages to towns shows little signs of abatement. This, it will be noticed, is a common feature of all urban areas. It was a common experience of those who left the City in a hurry in 1942 and returned later that every time they felt the return was a relief. The clerical staff of many offices requested voluntarily to return to the City and its war risks rather than undergo the privations of Vellore, Salem or Anantapur. A table showing the population, number of houses, the number of persons per house and the extent of additional houses needed in each panchayat area is appended (Appendix No. VI). Maps showing the fully built-up area sparsely built-up area and availability of land for building purposes, etc., were received from 87 of these panchayat boards and are enclosed (Annexure No. II).

Position of Housing.

88. The number of houses in the 182 major panchayat boards in the years 1941 and 1946 according to information received was approximately 3.75 and 4.52 lakhs, respectively. While the population during the quinquennium records a rise of 24 per cent, the increase in the number of houses built during the corresponding period is about 20 per cent only. Even so, this indicates considerable increase of building activity in semi-urban areas during and after the war. The increase in the number of houses, though marked, has not kept pace with the growth of population. There are, however, a few exceptions, viz., (1) Attur, (2) Sulur, (3) Kadayanallur, (4) Kariamangalam, (5) Kamuthi, (6) Narayana-devarakeri, (7) Ponneri, (8) Kalahasthi, (9) Sathankulam, (10) Parchur, (11) Bobbili, (12) Huvinahadagalli, (13) Puttur, (14) Kanadukathan, (15) Udangudi, (16) Tirukoyilur, (17) Nattarasankottai, (18) Pattukottai, (19) Amalapuram and (20) Badagara. In the first 18 of these panchayats, the average density per house is less than 6, while it is 7 and 12 in Amalapuram and Badagara respectively.

The average density of population per house varies in each major panchayat board. This variation ranges from 2.5 to 22 persons per house, the greatest density of 22 persons per house being in Valparai, a tea plantation station in the Anamalais; next in density is 16.6 in Villivakkam which adjoins the Madras City; and the lowest 2.5 is in Alwartirunagari in Tinnevely district. There are 55 major panchayat boards in which the density is more than six persons per house and the remaining 127 have six and less than six persons per house on an average.

Estimates of Housing Needs in Major Panchayat Board Areas.

89. Enquiries show that the housing conditions in these areas are not altogether satisfactory. The number of available dwellings is insufficient to house the additional population in practically every major panchayat. It is difficult to determine the extent of housing shortage from the statistics furnished by the major panchayat boards as no detailed census was taken in respect of the houses, occupied or vacant, extent of accommodation in each, etc. According to figures for 1946 furnished by the 182 major panchayat boards, it is estimated, that 33,000 additional houses are needed for 182 townships (at the rate of six persons per house). It is to be noticed however that the average density of population per house in the rural areas of this Province was only about 5 in the census of 1941 and if the same density in urban population is to be aimed at we shall need an additional 39,000 houses. The estimate is, however, a rough calculation based on the proportion between the number of houses and the population. This figure may, therefore, be regarded as a rough index of the need; but it is desirable that a detailed survey of housing, showing the extent of overcrowding existing in each

major panchayat board area and the number of houses which are below human standard of habitation, is undertaken to serve as a correct guide for formulating housing schemes in individual areas.

Slums.

90. Statistics collected reveal that there were over 100,000 slum dwellings in 1941 and this number increased to 1.53 lakhs in 1946. Out of this, more than 50 per cent consist of single-room tenements or huts, without plinths, windows or adequate ventilation, the only opening being a doorway without a door often too low to enter without stooping.

The Royal Commission on Labour in India (1931) observed that many of the poorer classes, seeking in vain for accommodation, squat on private land and build flimsy shelters to protect them against sun and rain. It will be difficult to call them houses. When the land-owners' demands for ground rent become excessive, these people move to other sites equally unsuitable and no less precarious. Eventually scattered cherries spring up where overcrowding and bad sanitation produce their usual deleterious effects. For want of drainage and in the absence of latrines, streams of sewage meander over the pathways. It is not surprising that epidemics frequently break out in these plague spots and that both sickness and mortality rates of their inmates reach high levels. They form ultimately the foci of infection for the city, whose amenities and safeguards are ineffective against this biological invasion of infective bacilli.

These conditions prevail even to-day. Slums cause losses to the community which are seldom recognized. There is statistical and presumptive evidence of the inevitable ill-effects of slum living, on conduct as well as on health. Health statistics generally, and mortality rates in particular, reveal the damaging results of life under these conditions. The importance of slum clearance can hardly be underestimated. It does not require a visionary to see, what enormous benefit would accrue to these slum dwellers and their families if they had decent dwelling houses and the beneficial influence which it must have on the nation as a whole. Slums are growing cancer spots which need eradication for the safety of the nation.

Homeless Poor and Beggars.

91. Data collected from the 182 major panchayat boards show that there were about 1.21 lakhs of unskilled and casual labourers in 1946 and over 21,000 indigent poor (beggars) who had no homes. It is unfortunate that little attention has so far been paid to this class of persons.

Town-Planning Schemes.

92. It is ascertained from the Inspector of Municipal Councils and Local Boards that 36 major panchayat boards have so far taken up Town-Planning Schemes and that there are 3 schemes under execution, 3 under consideration by the Government and that 38 schemes are under preparation. Information is not available as to the extent of the additional houses that will be provided under the above schemes, but it is hoped that if these schemes at least are pushed up speedily a large number of houses will be constructed reducing the housing shortage to some extent. Here again these schemes are designed to cater to the needs of the upper and lower middle classes only. The panchayats and local bodies treat this as a source of income, rather than a mere utilitarian measure.

Rent Control.

93. From the information received it is seen that the Madras Buildings (Lease and Rent Control) Act, 1946, is in operation in 651 major panchayat boards. It is considered by the major panchayat boards that the enforcement of this Act has not had the desired effect as the tenants are reported to be putting up with the difficulties by voluntarily paying increased rents (paying *pugrees* as it is called in Bombay) to secure accommodation. As already observed, this Act is an emergency measure, only intended to help the existing residents from abnormal rise in rents.

Housing for Industrial Workers.

94. There are big industrial concerns employing more than 200 workers in the following panchayats areas.

(1) *Guntakal*.—There are 3 big factories employing more than 200 workers each. The employees are living in private quarters. Some are living in the premises of the factory itself in quarters provided by the owners.

(2) *Yemmiganur*. There is one handloom weavers' co-operative society wherein 2,500 workers are employed. The society is constructing a colony of its own and it has acquired sufficient land under the Land Acquisition Act.

(3) *Kurichi*.—There are two mills employing more than 2,000 people. The management's of the industrial units have provided 150 houses accommodating about 1,000 people. The rest of the workers live interspersed with the general population. The managements have no house-building programme for the workers.

(4) *Singanallur*.—There is one mill by name Saroja Mills. It employs more than 677 persons. Another mill, viz., Vasanta Mills has 2,700 workers. The Managing Agents of the Saroja Mills are acquiring lands to the extent of 96 acres for the construction of a labour colony near their mills.

(5) *Parchoor*.—There is a branch of Indian Leaf Tobacco Company employing more than 1,000 persons. They have no houses nor housing schemes for the workers.

(6) *Maddikera*.—There are 3 factories. All the three engage about 200 workers who live with the general population.

(7) *Peelamedu*.—There are three mills and one industrial institute all employing about 5,000 workers. They live interspersed with the general population. No housing is provided for any of them by the industrial establishments.

(8) *Bobbili*.—There is one sugar mill employing more than 300 workers. Quarters are not provided for the workers by the mill.

(9) *Arkonam*.—There is one Railway Engineering Workshop and Locomotive shed employing more than 1,000 persons. Most of them are not provided with quarters. The colonies provided for them will accommodate only 30 per cent of the workers. The total number of houses in the railway colony is 482.

(10) *Kuniamuthur*.—There is one Vijayalakshmi Mills employing more than 680 workers. Fifty families are staying adjacent to the mills on land belonging to the management. They have constructed houses of their own. The management recently has undertaken a house-building programme and it has applied to the Collector for acquisition of land.

(11) *Nellikuppam*.—The East India Distillery and Sugar Factory employs more than 2,000 workers. A colony consisting of 50 houses is now provided solely for officers and not for the workers who live interspersed with the general population.

(12) *Manapparai*.—There is one big cotton mill employing more than 1,500 workers. Temporary sheds have been provided for the unskilled casual workers by the management. There are 23 huts providing accommodation for about 700 persons.

Part played by Co-operative Building Societies in the Panchayat Board Areas.

95. Co-operative building societies have been recently started in about 10 towns. All panchayat boards favour the formation of co-operative housing societies.

Availability of Building Land.

96. Vacant lands suitable for construction of houses are available in all panchayat board areas except Singanallur, Narayanadevarakeri (Tunghabadra Project), Sriperumbudur, Sholinghur (as it is surrounded by wet fields), Vendasur, Baruva and Ayyampettai. It is suggested that Government waste lands (dry and poramboke) on the outskirts of the panchayat areas might be utilized for house building in the following cases: Erudavadi, Valparai, Sendamangalam, Kulasekharapatnam and Kavali. It is also suggested that lands belonging to private parties, viz., poramboke lands belonging to Sivaganga Zamindar in Nattarasankottai, Yeditha, Pernambut (lands belonging to private parties and Bagaya lands vested in official trustees) and at Alwartirunagari (six acres of land belonging to temple authorities) might also be acquired and made suitable for house construction.

Acquisition of Land for Building Houses.

97. There is an abnormal increase in the value of land for reasons enumerated elsewhere. Majority of panchayat boards are of opinion that it is necessary to invoke the provision of Land Acquisition Act for acquiring house sites except the following panchayats who do not agree to compulsory acquisition. They are Tirukoyilur, Narayanadevarakeri, Yemmiganur, Sriperumbudur, Tirukalikundram, Uttiramerur, Singanallur, Karamadai, Konkudur, Avanigadda, Mohanur, Tirukattupalli, Draksharam, Vendasur, Perambalur, Bobbili, Ambasamudram, Ganapavaram and Chebrole.

Control over Land Values.

98. As in the case of municipalities, there has been a steep rise in the value of land and our observations in respect of this matter made elsewhere apply with equal force here also.

Amenities Available.

99. Protected water-supply schemes are in operation in Karamadai, Tiruppattur (Ramnad), Courtallam, Kayalpatnam, Mettupalayam, Arkonam, Kosgi, Tiruchendur, Rameswaram, Arantangi, Manachanallur.

Protected water-supply schemes are under contemplation in Sankarankoil, Alandur, Nilacottai, Ramnad, Krishnagiri, Namagiripet, Kalakad, Kallidaikurichi and Turaiyur.

The existing supply is not capable of supplying additional population without augmentation.

Drainage.

100. The same tale of woe obtains in regard to drainage system in panchayat areas. Proper conservancy arrangements are not at all to be found in many of the panchayats. The open drainage system is in vogue in Namagiripet and soak pit system is in operation in Chodavaram, Kayalpatnam and Kamuthi. In Alandur, Kalahasti, Karamadai, Melur, Turaiyur, Mettupalayam and Tiruchendur, drainage schemes are under contemplation.

Electric Distribution.

101. Forty-eight panchayat boards have been connected to the electric system. All the houses are not electrified. The minimum annual rental value of houses which have been connected varies from Rs. 51 to Rs. 100. Most of the panchayats have not furnished the particulars of the lower income group houses which have been provided with electricity.

Educational Facilities.

102. Madras Province has 31,849 primary schools for boys and 4,186 for girls with a total strength of 3,027,458 children enrolled in them whereas school-going population (age group 6-11) is about 63 lakhs, i.e., over half the number of children of school-going age have no schools to go to. Census in one such village with a population of over 1,000 revealed that over 50 boys of school-going age were left without a school to go to, and spend most of their time tending cattle or playing marbles in the streets. This indicates the need for considerable increase in educational facilities in the Province.

Provision of Amenities in Rudimentary Stage.

103. From the above typical examples of amenities available in the semi-urban parts it may be seen that health, sanitary services and water-supply are in a rudimentary stage of development. The work in regard to conservancy and sanitary conveniences has been mainly directed towards improvement of municipal areas and to lesser extent only of major panchayat board areas.

Development of Amenities.

104. The main impediment to development at present is the want of civic consciousness in the administrations concerned. Development of these amenities requires a definite contribution by the local bodies concerned towards the cost of the schemes, generally one-half in the shape of equated payments over a long term of years and the equated payment are financed from specific taxes. It is the unwillingness to face these taxes that appear to set the limit to the more rapid development of these amenities. The Government have to decide whether they would go the whole hog and finance the entire schemes or only help those who help themselves. It may cost anything between Rs. 4 to 8 crores.

CHAPTER VII.

HOUSING FOR THE INDUSTRIAL WORKERS.

Present Position.

105. In addition to the information received from the municipalities and the major panchayat boards we addressed industrial concerns and some big employers. The particulars collected are indicated in the table appended (Appendix No. VII). The total number of workers employed in all the 30 concerns referred to in the appendix aggregate to about 59,200. The number of dwellings provided for the industrial workers works to only about 2,600 which account for only about 4 per cent of the labour employed.

From a few but typical examples it is seen that the problems associated with the housing of the working classes have increased with the development of industries. There has been a constant ingress into the cities and towns. Cities and towns such as Madura, Coimbatore, Vizagapatam, Guntur, Salem, Tinnevely and Bezwada where new industries have sprung up have increased with great rapidity and the workers usually live interspersed with the general population in the industrial and urban centres except in a very few instances where separate colonies have been provided for them by the employers.

Co-operative Workers' Colony, Harveypatti.

106. Besides the workers' colonies of the Buckingham and Carnatic Mills, Madras, which we have already dealt with in paragraph 39 of Chapter IV, the most important employers' housing scheme in this Province, is that provided by the Madura Mills, a note on which is given hereunder.

The Madura Mills Company employ 13,722 workers and 492 other employees. About 99 per cent of the former draw a salary between Rs. 51 to Rs. 100. So far, the mills have provided 780 houses for workers drawing less than Rs. 100 per mensem. Until 1939 they had only workers' lines consisting of 176 houses, which now accommodate 252 workers. In 1939 they launched a co-operative housing scheme under which the workers by paying easy monthly instalments could eventually become the owners of the houses. The mills acquired 67.97 acres of land during 1938-39 through Government help at a total cost of about Rs. 19,000. The total cost of the colony inclusive of the cost of sites comes to about 6.52 lakhs of rupees out of which the cost recoverable from the workers is Rs. 3.62 lakhs at Rs. 600 per worker. The workers are required to pay their shares by monthly payments at the rate of Rs. 4 per house. It is provided in the scheme that the workers may become the owners of houses in about 12½ years. At present 1,480 workers with their dependants totalling 4,000 persons have been provided with houses in 604 tenements. Under the scheme, the following amenities have been provided—viz., protected water-supply, sewerage and schools. Transport facilities have also been arranged with the South Indian Railway. The Mills have agreed to defray the cost of season ticket of Re. 1-5-0 per mensem per house. The Mills have more housing schemes under consideration. They consider that their scheme, whereby the employer builds houses and collects the value in instalments, is better than houses built at the employer's cost. This scheme, however, is disapproved by the Buckingham and Carnatic Mills, for the reason, that as retiring employees keep the houses, new employees have to be provided with new houses adding a constant burden on the mills besides the possibility of a mill colony developing into a mixed colony.

Importance of Labour Housing.

107. Many employers have realized the necessity for action and, in fact, have carried out the majority of the housing schemes till now put in operation without financial assistance from Government or local bodies. But so far only the fringe of the problem has been touched. Improved housing is the first step towards improvement in the standard of living, behaviour and morals of the industrial worker. Decent dwelling houses for the workers within a reasonable distance from their place of work will have a favourable influence on their efficiency, quality and output. Proximity to the place of employment is an important factor as it eliminates the necessity for the provision of transport facilities and avoids traffic congestion and similar disadvantages. Units of organizations, such as these, can more easily co-operate to run their own dairies, eating houses, canteens, creches, music and recreation halls and other community conveniences than a mixed population.

Responsibility of Providing Housing for the Workers.

108. The Whitley Commission have observed that the action taken by the employers, Government and local bodies for providing decent hygienic housing conditions for the workers is in inverse ratio to their responsibility; employers have done most; local bodies least and that the main responsibility for housing policy lies with the Government and the local bodies. The Employers' Federation of Southern India, Madras, have expressed that no part of the capital cost of housing the workers should be borne by the employers as no employer can find the necessary means to construct houses for all the workers. In the words of the Royal Commission on Labour, the important causes contributing to the present situation are the lack of co-ordination between the parties concerned and the apparent doubt as to where the responsibility should lie. The efforts made by some employers seem to have encouraged a tendency to leave the whole problem to them while some municipalities tend to look to the Government to raise from the people as a whole, funds which should be found locally. The position demands immediate attention, not only from the Government and local authorities, but also from organized industry and the public, since all are deeply concerned.

Bombay Scheme of Housing Industrial Labour.

109. The Bombay Government have formulated a scheme whereby each employer admitted to the benefits of the scheme pays Rs. 2 per head employed and gets a preferential right to the allotment of houses in the scheme; and when an employee is allotted, the industry pays a further one rupee towards the rental of the employee. The employee himself pays about 10 per cent of his emoluments—ranging from Rs. 5-8-0 to Rs. 11, making up a total monthly realizable rental of a minimum of Rs. 8-8-0 to Rs. 14 or an average of Rs. 11-4-0 per mensem justifying an outlay of about Rs. 2,250 per house by the agency providing the housing.

CHAPTER VIII.

REGULATION OF BUILDING ACTIVITIES.

High Cost of Building Land.

110. The foremost factor involved in large-scale housing schemes is the availability of land. Though land is plentiful, its cost has gone up very high, especially in developed areas. The very high inflation of prices that has taken place in commodities have had their repercussions on land values. The enormous outlay of funds in schemes connected with the war and the inordinately high rates paid for the works have put very large sums of money in the hands of a large body of people, the newly rich. Need for secure investment for this large sum, desire to possess land, particularly in favoured localities and the consequent scramble for sites, the speculative fever among professional land and neo-professional land agents and not the least of them all, the speculating fiend and the land grabber have fostered and helped this phenomenon.

Control of Cost of House-site.

111. This high cost of land operates as a principal impediment against the revival of building activity. It is our considered opinion that effective control should be exercised over the cost of building land. Under the English Town and Country Planning Act, 1944, land required for public purposes, which include housing, could be compulsorily acquired and the compensation payable on such acquisition would be based on the prices of land prevailing on the thirty-first March 1939, together with an addition limited to a maximum of thirty per cent on such price. We consider that a similar legislative provision is necessary for this Province also. It seems to us right and proper that if the Government, or any local authority like a municipality, or a public utility concern like a Co-operative Building Society require land for house building purposes, the land should be compulsorily acquired by invoking the provisions of the Land Acquisition Act. With a view to control the prices of land, we consider that the prices shall be fixed on the basis of prices current in the locality in 1939-40, which may be called the basic price. An increment of a maximum of 40 per cent over the base may be allowed in respect of the land so acquired. This should be fixed by legislation so as to avoid disputes and exorbitant claims through courts, so common now. The control of prices should, however, apply only to land required for the purpose mentioned above.

Leasehold of Building Land preferable to Outright Purchase.

112. We also consider that instead of acquiring land and selling it to the house builder, the Government or the Corporation may acquire the land and lease it to the builder as indicated below. We further consider that land belonging to the Government, public bodies and temples, mosques and, where feasible, private lands which are suitable for building may not be purchased outright, but be requisitioned or assigned on long-term lease extending to 99 years with the option of renewal for a further period of 99 years, for development of housing. Such special laws as may be required for such requisition may be enacted for the purpose. In framing such legislation and taking lease of land belonging to religious institutions, due regard should be paid to the possibility of the religious authorities objecting to specific communities using the land belonging to the concerned religious institutions. It is understood that co-operative building laws preclude such leasing or assignment and the raising of loans thereon. We consider it should be possible to amend the rules so as to enable this being done. The system of leasehold is more advantageous all round than outright purchase or sale especially in urban areas. It enables a control being exercised on the development of the land and prevent abuse and creation of slums. It reduces capital investment on houses by the parties. For instance in the City of Madras, house-sites cost as much as Rs. 3,000 a ground and more in certain places. A unit of four-ground plot costs Rs. 12,000 plus stamp duties or Rs. 13,000. A 1,200 square feet plinth single-storeyed house on this will cost about Rs. 20,000. The land value in this case is nearly 40 per cent of the value of the house and makes it impossible for a middle class family to own a house. The leasehold scheme will make this feasible. It can be so devised that it will at the same time prove an investment and an asset to the Municipality or Corporation.

Acceleration of Acquisition.

113. Quite a lot of house-building schemes are held up on account of delays in the acquisition of land. Special land acquisition staff should be appointed whose duty is should be to speed up the acquisition or requisition of land to enable housing schemes to

be started without delay. Suitable provisions in the Land Acquisition Act and Rules are needed to enable this being done. The easiest is a modification of section 17 of the Land Acquisition Act so as to bring acquisition of land for local bodies, trusts and building societies within the purview of the emergencies referred to in the section.

Limiting of Appurtenant Open Spaces.

114. It was brought to our notice, that in the Madras City and even in certain towns, there are residences, with extensive open spaces appurtenant to them, far too large with reference to the actual buildings constructed on them. When there is scarcity of building land, particularly in developed areas, it seems to us necessary that such of the available open space as may be utilized for housing should be used for development of housing as far as possible. With a view to compel these owners of house property with extensive open spaces attached to them to develop their building land themselves or part with them to those who would construct buildings it has been suggested that some regulations should be laid down as to the maximum extent of open space which may be appurtenant to residential buildings. We are in full agreement with the suggestion. The Madras Corporation has laid down Building Regulations in which the minimum extents for house-sites for new buildings in the areas covered by sanctioned Town-Planning Schemes have been prescribed. We recommend that likewise the maximum extents for house-sites should also be prescribed as 20 times the plinth area of the building or 2 acres, whichever is less. Any area in excess of the maximum extent prescribed should be valued at market value and assessed to property tax accordingly. In the case of all housing schemes undertaken by local authorities or public utility bodies like co-operative societies, the building land should ordinarily be leased to the occupiers on long leases of 66 and 99 years on rental rather than be sold, so as to enable the authorities to have an effective control on the use of the land for the purpose for which it is leased and to be assured that buildings are constructed within a prescribed time, provided that where the conditions have been fulfilled, it will be open to the authorities to effect an outright sale by terminating the lease with consent.

Control of Land Value for Co-operative Housing Schemes.

115. Government have ordered that local committees should be constituted for the purpose of selecting building land in all towns to start house construction schemes on a co-operative basis. We have received information that 120 towns have constituted these committees and have selected suitable building land for launching housing schemes. We suggest that in all these cases, it is ensured that prices paid for lands are limited to the values mentioned in paragraph 111 supra, so that the housing schemes may prove successful and not be unduly hampered by exorbitant values.

Zoning of Areas.

116. The land available in any area should be distributed equitably according to the various needs of the community which include provision for residential and industrial areas, space for broad thoroughfares, parks and gardens and further development. It is desirable that residential areas are completely separated from the industrial areas and even among the latter, the quieter trades and industries should further be segregated from noisy ones and offensive trades should be completely removed to the outskirts. The bazaar, market and shopping areas which will be relatively quieter should not be far away from the residential areas. The community centre and playground should be very near the residential areas so that both children and adults can take as much advantage of them as possible. The amusement centre including cinema-theatre, etc., should be removed from the residential areas to avoid noise and traffic. Thus a proper zoning of the different areas is essential before any housing development schemes are launched. In the words of the Bhole Committee "Planning of land distribution and the development of housing should achieve jointly the purpose of transformation of the physical environment in order to create suitable conditions for healthful living."

Prohibition of Wet Cultivation in Land inside or contiguous to Urban Areas.

117. Wet lands and cultivated lands within the borders of a city or municipality are sources of infection and militate against the health of the locality. The Municipal Acts provide for the prohibition of such cultivation on a certificate by the health authorities and on payment of compensation. Such lands should ordinarily be reclaimed and made fit for building in preference to extending the borders of the municipality. The recent press note regarding the prohibition against reclamation of wet lands for building purposes should not apply to such areas or areas contiguous to cities and municipal towns.

Steel Supply Inadequate.

118. Considerable difficulties are being experienced in the matter of procuring building materials of all kinds. They are most acute in respect of steel, cement, timber, bricks,

fixtures, fittings and fastenings. As regards steel, its production and distribution are controlled by the Government of India. All demands for steel have been classified into the following six main categories to which allotments shown against each have been made for the year 1947 excluding the quota of 300,000 tons for railways:—

Category.	Quantity in tons.
(a) Industrial Maintenance and Packing	150,000
(b) Steel Processing Industries	210,000
(c) Government Development Schemes	80,000
(d) Private Industrial Development Schemes	50,000
(e), Export	10,000
(f) Provincial and State allotment for general public and small scale industries engaged in manufacture of consumer goods.	250,000
	<hr/> 750,000 <hr/>

It is learnt that of the 250,000 tons under (f) above Madras and the Madras States of Travancore, Cochin and Pudukotta were to receive 31,000 tons and out of that, 7,500 tons have been actually allotted so far and only 4,000 tons out of this allotment have been received by the Madras Government. The short supply is so acute that unless the Government of India are urged to adopt a more liberal policy in the matter of allotment of steel to Madras, very little steel will be made available for building purposes. We recommend that the Provincial Government do take necessary steps for getting a large allotment of steel from the Government of India and to see that an adequate share of this is obtained and earmarked for building schemes in the Madras Province.

It is not clear what the allotment to steel processing industries connotes. If it is for the manufacture of goods such as agricultural implements like crowbars and mamutties, house-fittings, buildingware like screws, nails, etc., and hardware, Madras should get a specific allotment for its requirements. The same would apply if it is for the manufacture of special quality steels, which at present may be of small quantities. We draw special attention to the fact that Madras is favourably situated for the manufacture of special alloy and special electric steels. It is felt that Madras gets very little of this allotment and it is our recommendation that they should set apart a specific part of this quota for Madras Province so that the Province may develop the industry and meet its own demand for manufactured goods.

Development of Small-scale Industries for the Manufacture of Building Furniture.

119. In this connexion we must mention that there are certain articles such as hold-fasts, butt, strap and parliamentary hinges, tower bolts, hasps and staples, padlock bolts, door locks of the rim type (old thotti-pottu) padlocks, screws, cross bolts, etc., and a whole host of other goods which are indispensable for building construction. Foreign goods of the above variety are available only in small quantities and cannot meet the demand of large-scale housing schemes. The prices of these articles vary over wide limits as indicated in Appendix VIII. The very wide divergency in price makes the case for a unitary control very desirable. An effective control, not control that drives things into the blackmarket, is required. In the case of goods brought into the Province, it is possible to institute a check at the point of entry and maintain stock books which have a reasonable chance of being correct and proceed to allot on that basis. Besides, we consider that these articles can be manufactured locally; the industry needs small capital and is capable of being developed with the help of the Government and that the Government assistance may be in the form of providing capital for establishing new or developing the local industries by partially subsidizing the existing industries and securing the requisite metal which is in short supply to facilitate the manufacture of the above articles in large quantities. A co-ordinated system of production is a *sine quo non* of successful working. A statement (Appendix IX) is attached showing the approximate requirements for the houses required in the City and the towns on a five-year plan. It will be seen therefrom that the requirements of these simple fittings are indeed very large and will well justify the development of an industry for their production.

Work for the Rolling Mills at Bezwada and Negapatam.

120. Another factor regarding steel needs consideration. We have at Bezwada a rerolling mill capable of rolling of about 3,000 tons a year and a mill at Negapatam capable of doing about 50,000 to 70,000 tons a year. Both these are idle for want of raw material—old rails or billets in the one case and billets in the other as also coal. It is stated that both these suffer on account of difficulties of transport and a good industry is being killed. Measures are required to put them on their feet at once. The distance from Tatanagar to Negapatam by rail is 1,261 miles with a change of gauge at Madras, Gudur or Arkonam

which adds an extra 40 miles or so. The distance from Tatanagar to Balasore, a port on the Orissa coast, is only 156 miles and both Balasore and Negapatam are ports easily accessible to steamers of moderate burden. It should be possible to charter a steamer of approximately 1,000 to 2,000 tons capacity to run a shuttle service between these two ports exclusively and supply all the requirements of the industry at Negapatam. It will then require about 20 wagons only for the transport of the billets to ports, which should be easy to secure. The outlay will pay itself every time, a very desirable help to a useful industry and at the same time remove the shortage of steel in the Province. This information has been gathered from the agents operating these firms and we understand that they would be agreeable to charter or purchase outright a steamer for the purpose, if the Government will give them the other facilities.

We understand that considerable quantities of old rails are left with railway administrations, which can be more usefully rerolled into useful material. This should be encouraged.

Cement.

121. There are four cement factories in the Presidency. They are at Madukkarai (Coimbatore), Dalmiapuram (Trichinopoly), Mangalagiri (Guntur) and Bezwada. For the purpose of the present report, we are not taking into account the factories which have been projected or under construction such as the one at Kurnool or the one at Tinnevely. We called for particulars from the factories and replies were received in respect of Madukkarai, Bezwada and Mangalagiri factories only. The optimum capacity of the output in Madukkarai is 15,000 tons per month while in the Bezwada factory it is 2,500 tons a month and in Mangalagiri 8,000 tons per month. We learn that the capacity of output at Dalmiapuram is 5,800 tons per month.

Taking the case of Madukkarai, for producing the maximum output and making the cement required for the building schemes, the following facilities are necessary according to the particulars forwarded by the Cement Company.

The factory would require 4,500 tons of coal per month and transport of these will occupy 225 open wagon trips per month. If each wagon would take a month to make a round trip from Jharia or Singareni to Madukkarai, 10 such trips would be possible in a year allowing a margin for breakdowns, etc. So they would need $(225 \times 12 = 2,700 \div 10 \text{ or } 270)$ open wagons to be reserved exclusively for transport of coal. Anything less will make the factory production short of its rated capacity and to that extent uneconomical by increasing the overheads, etc.

Gypsum comes from Trichinopoly district and the factory requires about 600 tons per month of this commodity. To get 7,200 tons a year of gypsum, the company would need 360 wagon trips per year. Each wagon may be assumed to take 7 days for a round trip and would do 50 trips a year. On this basis, they would require $7\frac{1}{5}$ or say 8 wagons to be allotted to them.

For an optimum output of 180,000 tons of cement per year, they would need 9,000 wagon trips for the distribution of cement. The largest distance for the supply may be taken as Madras or Tuticorin and this distance can be covered in 10 days making 35 trips a year approximately. So they would need $(9,000 \div 35 \text{ or } 257)$ covered wagons exclusively for transport of cement.

Assuming that the entire rated capacity of 180,000 tons of cement is moved by rail, the Madukkarai works would require, for jute bags only, 15 closed wagons per month. For the (15×12) 180 wagon trips and at 10 trips per wagon for a year, their requirements would come to 18 closed wagons.

To summarize, the Madukkarai works would require the following number of wagons to be run exclusively for their benefit to enable the factory being kept at peak production and the full production being made available to the public:—

	Open wagons.	Closed wagons.
1 For coal	270	..
2 Gypsum	8	..
3 For cement	257
4 For jute bags	18
	<hr/> 278	<hr/> 275

On a similar basis the number of wagons required for each of the other three factories are as under, making a total of 520 open wagons and 505 closed wagons for the four factories :---

	Open wagons.	Closed wagons.
Mangalagiri	108	100
Andhra Cement Company	32	30
Dalmiapuram	102	100
	<hr/> 242	<hr/> 230

Estimating the cost of a closed wagon to be Rs. 30,000 and an open wagon at Rs. 20,000 an outlay of Rs. 2'56 crores will be required to keep the four factories mentioned above, always above want in the manufacture and distribution of cement. But this outlay will pay itself, will be a remunerative enterprise and well worth the expenditure. A statement of capital and return on such an enterprise is appended (Appendix X). If the Government contemplate the installation of new factories, they will need to be similarly provided for.

Under present conditions, we consider that these facilities should be provided by Government to the cement manufacturers if the maximum output is to be secured and if the material should be made available in adequate quantities to building schemes.

Timber.

122. There is also shortage of timber in the market, particularly of good quality timber such as Burma teak and Malabar teak, useful for the construction of buildings. But we are of opinion that country wood need not be excluded from the purview of useful timbers. The most used ones are *Hopea Parviflora* (Iumbogam), *Xyliaxylacarpa* (Irul), *Terminalia paniculata* (Pillamarudu or Tellameddi), *Terminalia tomentosa* (Karaimarudu, Nelameddi), *Lagerstroemia Lanceolata* (Venteak), *Pterocarpus Marsupium* (Vengai or Vegesa), *Mesua Fewea* (Nangal), *Artocarpus Integrifolia* (Jack, Pila, Panasa), *Hardwickia Binata* (acha, yepi), *Shoresa Robusta* (Sai—Salua). The quantity of Burma teak imported into the Province is reported to be small. However, as there are no exchange difficulties in respect of imports from Burma the question of importing Burma teak on a large scale may be investigated. Teak is available in this Province on the West Coast and in the Circars. They may be used to the maximum possible extent for building schemes. If the price of timber can be brought down to a more reasonable level it would result in a substantial reduction on cost of timber used for building which in turn will make the Madras terrace economically possible and avoid the need for iron and cement. It should be mentioned that forests require systematic replantation and rotational exploitation so that the plantation timbers may be available for use at least in the future; and we have no doubt plantation teak and marudu can make the best contribution to the future timber wealth. Plantation of this timber in the delta regions is a possibility worth investigation and active pursuit.

Scaffolding Materials.

123. It has been brought to our notice that conditions are imposed for the return of scaffolding materials such as casuarina poles, bamboos, etc., after usage by the builders to Government depots for being sold again as firewood. As by the time the materials serve their purpose by cutting, framing, etc., and exposure to the weather, their value as fuel will have greatly deteriorated, it is not worthwhile to impose this condition. We recommend that these conditions need not be imposed in future.

Increase of Timber Production.

124. It is impossible that all the timber required can be secured. The maximum quantity of timber extracted from the Province is said to be 12,000 tons of teak and 600 tons of other wood every year of which 3,000 tons might be available for the city. A more extended use of varieties of timber mentioned above other than teak needs popularization. The figures furnished in the quinquennial statistical abstract show that the average production of teak was in the neighbourhood of 20,000 tons and other class of timber an equal quantity, and indicate a better position of timber supply though it is not altogether satisfactory. For the rest, extensive use of steel and concrete fittings is called for and we have to depend on outside sources of supply for our requirements. In the course of our enquiry it was elicited that it was not possible to increase the quantity of timber as only the annual increment could be taken and in the interest of conserving national wealth it was not desirable to fell more trees. This, the Committee feels, needs a great deal more of investigation, and, if necessary, active steps should be taken to step up production, replantation and regeneration.

Reduction in Cost of Timber.

125. At present all good timber is reserved for Government, railways and municipalities and sold in logs at Rs. 6 per cubic foot of ordinary sort and Rs. 9 per cubic foot of superior timber. We were informed by the Forest department that even rejected timber is sold in auction at as high a price as Rs. 22 per cubic foot and good quality timber fetches higher price. It is reported that, during the war, timber was supplied to the Defence Department at about Rs. 3-4-0 a cubic foot. It is suggested that for building purposes also, Government should reduce the cost of timber and bring it down to a reasonable level and make it available at a price as near to that allowed for defence purposes as possible. There cannot be much justification for the differentiation. It is not correct to create an artificial necessity with an eye to high prices at auctions.

We suggest that the royalty on timber such as teak should be brought down to a more reasonable figure to keep down the cost of building to a minimum and that a substantial reduction in this behalf will make Madras terrace possible and avoid the need for large quantities of cement and steel for reinforced concrete roof slabs. Forest department should, we consider, be a service organization for the development of forest wealth, conservation and supply of its products and should not be necessarily required to show visible profits.

Transport of Timber.

126. As in the case of cement, transport facilities will have to be provided for timber also for the building schemes. The maximum distance from the West Coast or the Circars may be taken as from Calicut to Madras or Vizagapatam to Madras. For the transport of 12,000 tons of timber per annum we may require 600 wagons trips a year. We may take it that 10 round trips can be made in a year which would mean that we would require 60 wagons exclusively for the transport of timber for the building schemes.

Mass Production of Doors and Windows.

127. As doors, windows, etc., would be required in large numbers for the building schemes, we recommend that the use of machinery for the manufacture of the standard parts of such articles may be undertaken as the labour has become scarce and dear.

As early as the beginning of the century, Richardson and Cruddas of Bombay had standard doors and windows made in large quantities and made available for delivery from stock. Standardization of doors and windows and their manufacture on a large scale will save material and labour and enable more correct fitting on account of machine operations. One firm in Madras is in a position to make these at 50 units per week. It needs encouragement for development. The remedy is more saw mills and wood working machinery for production of these and of their sale as standard products in given sizes at short notice. Building programme cannot be accelerated in any other way.

Bricks.

128. The production of bricks is considerably short of the actual demand. The chief difficulties which have been felt in the way of production are (1) labour problems, (2) inadequacy of supply of coal and (3) transport facilities. At present there is plenty of land available for taking earth for the manufacture of bricks and also for drying them. No difficulty so far has been experienced in the matter of procuring the basic raw material for the brick industry, namely, clay and sand; but coal for firing bricks is again in short supply for the industry. It was reported that the use of oil for burning bricks is not only more costly but also would require larger initial capital outlay. It requires shipping from overseas and involves flight of capital from the country.

It is stated that for the manufacture of one lakh of bricks, twenty tons (or one wagon load) of slack coal is necessary and sixty wagons for the purpose of transporting coal exclusively for the manufacture of bricks in and around Madras will be necessary.

The labour problem seems to be the most acute of the difficulties concerned with brick manufacture. Labour is neither steady nor regular and very high wages have to be paid in advance to the workers to ensure regular attendance and even then the workers disappoint the manufacturers by absenting themselves quite often. The cost incurred by the manufacturers on account of such absence by the workers adds to the cost of production. Ten to twenty-five per cent of the cost of the bricks is reported to be on account of the defections of workers. The use of machine for the preparation of bricks on a large scale requires investigation and if this can be done the major problem of the brick manufacturers, namely, adequate supply of steady labour, may be minimized. Existing machines take a lot of power and require large outlay, which make the resultant bricks too expensive. Cheapening of production on this line is called for.

Cost of Bricks.

129. According to the rates quoted by the brick manufacturers in general it is seen that the cost of production of ground-moulded bricks worked out to Rs. 12 per thousand, overhead and other charges being ignored and inclusive of these latter charges it would come to Rs. 13 per thousand for ground-moulded bricks and Rs. 28 for table-moulded bricks as detailed below :—

*(a) According to Jaya Brick works—**Ground-moulded bricks—*

	RS.	A.	P.	
Moulding	2	2	0	
Drying and stacking	0	6	0	
Unloading and stacking	1	0	0	
Loading into kilns per 20,000 at Rs. 25 per chamber	1	4	0	
Unloading at Rs. 15	0	12	0	
Coal at Rs. 36 per ton	6	0	0	
Sundries	0	8	0	
	12	0	0	per 1,000 bricks for 2" dimensions.

(b) As given by Mr. A. Vaman Rao, Assistant Engineer, Public Works Department, North-West Subdivision, Madras—

	2" platform-moulded bricks.	2½" table moulded bricks.
	RS. A. P.	RS. A. P.
Cost of earth	0 4 0	0 6 0
Cost of collection and seasoning and moulding charges excluding working charges as actually paid for job workers	2 0 0	4 8 0
Watering charges	0 2 0	0 4 0
Ventilation and drying	0 8 0	0 12 0
Raw wastage at 15 per cent for 2" brick and 5 per cent for 2½" bricks	0 7 0	0 5 0
Loading into chamber	1 4 0	1 12 0
Firing (labour)	0 10 0	0 12 0
Cost of coal at Rs. 32 per 16 tons required for lakh of 2" brick and 20 tons of 1 lakh of 2½" brick—second-grade coal—cost of coal at Rs. 32 at site of kiln	5 2 0	6 6 0
Unloading from chamber	0 12 0	1 0 0
Putting earth and removing	0 2 0	0 3 0
Burnt wastage at 5 per cent for 2" bricks and 2½ per cent for 2½" bricks	0 9 0	0 7 0
Tools and plant charges at ½ per cent	0 1 0	0 1 0
Add 25 per cent for overhead and profits	2 6 0	3 5 0
	14 3 0	20 1 0

(c) As given by Brick and Tile Manufacturers' Association—

	2" country bricks.	2½" table moulded bricks.
	RS. A. P.	RS. A. P.
Moulding, ventilation, raw wastage, etc.	6 1 6	9 15 0
Loading, unloading coal, etc.	10 14 9	14 2 6
Tools equipment and overheads	6 6 9	10 5 3
	23 7 0	34 6 9
	or	or
	23 8 0	34 8 0

(d) Formulae for bricks as furnished by Mr. K. Subba Rao, B.A., B.E., A.I.M.E., Chartered Engineer, Messrs. Mc Kenzies, Limited—

Cost of 1,000 country bricks at kiln in Co. (size 8½" × 4½" × 2½")—Rupees.

Cost of 1,000 stock bricks at kiln in Cs. (size 9" × 4½" × 2½")—Rupees

L = Labour rate of a man-coolie per day in rupees.

F = Cost of slack coal per ton in rupees.

Co = 2.5 plus 10 L plus .25 F.

Cs = 5.0 plus 15 L plus .35 F.

(e) As worked out by us—

(i) Ground-moulded bricks—

	RS.	A.	P.
Moulding (including digging and pugging) ..	2	2	0
Drying and stacking	0	6	0
Unloading and stacking	1	0	0
Loading into kilns per 20,000 at Rs. 25 ..	1	4	0
Unloading into kilns per 20,000 at Rs. 15 ..	0	12	0
Coal at Rs. 36 per ton	6	0	0
Sundries	0	8	0
Overheads 16-2/3 per cent	2	0	0
Labour insurance 10 per cent (such as loss of advance, etc.)	1	2	0
Weather insurance 5 per cent	0	6	0
Interest on capital on an output of 3,000,000 of bricks per annum on a capital of Rs. 1,00,000 at 6 per cent	2	0	0
Profits	1	2	0
	18	10	0

i.e., Rs. 19 for 2" bricks.

With the addition of Re. 1 for 2½" size Rs. 20 is a reasonable price for ground-moulded bricks.

(ii) Table moulded bricks 8½" × 4½" × 2½"—

	RS.	A.	P.
Moulder 1 at Rs. 2	2	0	0
Coolies for digging, tempering and conveying each 2 at Rs. 1-8-0	3	0	0
Women and boys for conveying moulded bricks and stacking dried ones, 3 at Re. 0-12-0	2	4	0
Labour for water-supply man 1½ at Rs. 1-8-0	0	8	0
Sundries—such as moulds, baskets, etc.	0	4	0
	8	0	0
Man for loaming kiln 1 at Rs. 1-8-0	1	8	0
Women for loading kiln 2 at Re. 0-12-0	1	8	0
Coal—tons at Rs. 36 (¼th ton)	6	0	0
Man for firing 1 at Rs. 1-8-0	1	8	0
Man for unloading and stacking 1 at Rs. 1-8-0	1	8	0
Sundries	1	0	0
	13	0	0
Total costs	21	0	0
Overheads 16-2/3 per cent	3	8	0
Loss on labour 10 per cent	1	8	0
Loss on bricks 5 per cent	0	12	0
Interest on capital	2	0	0
Profits 10 per cent	2	4	0
	10	0	0

Total—Rs. 8 + Rs. 13 + Rs. 10 = Rs. 31

Thus Rs. 31 is a reasonable price for table-moulded bricks.

According to the data furnished in the Bombay specifications with the rates for labour and material converted to Madras conditions, table-moulded bricks cost Rs. 31 per thousand. The prices given by the Brick Manufacturers' Association, Madras, are Rs. 23-8-0 per thousand for ground-moulded bricks and Rs. 34-8-0 for table-moulded bricks. This means that about 20 to 25 per cent excess profit is added to the cost by the brick manufacturers and brick dealers. We understand that bricks are sold at as high a rate as Rs. 30 per thousand for ground-moulded bricks and Rs. 45 a thousand for table-moulded bricks and these rates are some 50 per cent over the prices furnished by the manufacturers themselves. There is thus clear profiteering by the brick industry; and this can be put a stop to, only, if the cost of bricks is controlled. If adequate supply of slack coal is made available and transport facilities are afforded it should be possible to work out a costing formula in relation to labour rates and price of coal and introduce a scheme of control over the price of bricks. But the price control will fail, if the entire output of the kilns against coal supply is not brought to account and allotted specifically to consumers. It is a large responsibility but must be tackled with courage

and determination without fear or favour. It is for Government to implement it. We also understand some help will be needed in the allotment of lorries for transport of coal from the railway station to the kiln site and the conveyance of the bricks from the kilns to work sites.

Wagon requirements for the expansion of brick industry for large-scale housing projects in the Madras City are indicated in Appendix XI.

Flooring and Roofing.

130. If houses are taken to have an average floor area of 500 square feet, we need roughly a lakh of tiles for 120 houses at about 833 tiles (8" × 8") per house. From the replies furnished by Sri Krishna Brick Works it is seen that their output will be sufficient to build 1,800 houses. But the use of flooring tiles is not universal, concrete and cement plaster, granolithic and mosaic flooring being adopted as alternatives. As regards roofing tiles, about 150 tiles are required per square (100 square feet) or 750 tiles per house. These come mostly from the West Coast and transport facilities are required to bring them to the market. As regards transport, it may be assumed that a wagon takes about 4,000 tiles and on this calculation we need about 75 wagons specifically allotted to this duty making 50 trips a year at six days for a round trip per wagon to convey 150 lakhs of tiles for the Madras City.

Asbestos Roofing.

131. There is only one factory manufacturing the material in the country near Katni. All Government departments, Railways, etc., generally purchase their requirements of this material through the Chief Controller of Purchases, New Delhi. A certain quantity is also available through local stockists for distribution to private parties. From the replies to the questionnaire furnished by the Asbestos Cement (India), Limited, it is seen that about 450 tons of this material are the monthly maximum that could be made available by the company to this Province, but this supply would depend according to the priority demands of Government and availability of transport. We consider that this quantity would be sufficient for the present needs of this Province.

Sand.

132. The supply of sand is generally plentiful as the material is taken out from the river beds. The prices demanded for the supply of this material are, however, high due to the scarcity and the increased cost of labour and the prevailing difficulties of transport. If lorries are made available specially for the building schemes in the Madras City and important urban areas, the cost of sand can to a very large extent be reduced.

Hired lorry transport now costs about Rs. 7 per load per trip per 100 cubic feet. Private owners are able to do it for about Rs. 4-8-0 to Rs. 5; cost of sand ex-lorry is about Re. 1 per lorry load. The overall cost is Rs. 6 to Rs. 8. It should not cost over Rs. 10 against the present sale price of Rs. 18 and indicates the need for control.

Sanitary Fittings.

133. It is seen from the replies received to the enquiry on the availability of sanitary fittings that there are a good number of manufacturers available in our country and that if orders are given at a time, say for a thousand, it is reasonable to expect substantial rebates. We learn that Indian made sanitary fittings are available in plenty and they could be used.

The following firms (List A) manufacture sanitary ware in the Province and the firms in List B have representatives in this Province. They are in a position to supply any reasonable requirements of the materials but not the abnormal requirements of some lakhs of houses per year. Subsidized contracts and large expansion of industry are required to step up production to satisfy our needs.

But there again it is seen as in the case of other materials that transport is the main difficulty in making the sanitary fittings available in sufficient numbers at the places they are required.

STATEMENT A.

The following firms manufacture sanitary fittings inside the Madras Province :—

- (1) The Stoneware Pipes (Madras), Ltd., Tiruvallur.
- (2) Perfect Pottery & Co., Ltd., manufacturers of Stoneware Pipes and Specialists, 24, Thambu Chetty Street, Madras.

STATEMENT B.

Names of representatives in the Province.	Names of manufacturers outside the Province.
(1) King & Co., 321, Thambu Chetty Street, Madras.	The Standard Pottery Works, Limited, Alwaye.
(2) Messrs. Lakshmi Rattans, Ltd., 316, Thambu Chetty Street, Madras.	Parasuram Pottery Works, Thangadh (Kathiawar).
(3) Richardson & Cruddas, 1st Line Beach, Madras.	Burn & Company, Refractory Ceramic Works, Raniganj.

Standardization and Mass Production of Standard Parts.

131. The term 'pre-fabrication' is commonly applied to the manufacture of the entire house and its rapid and mechanical erection on the site, rather than to the application of factory methods in the mass production of certain component parts thereby reducing costs. In assessing the merits of alternative forms of construction the first consideration is what constitutes a proper standard of habitability. The second must be the extent to which alternative forms avoid calls on normal building labour or materials. To judge the technical efficiency of a system some standard of comparison is necessary. The usual standard is the conventional brick house, so well established in public confidence by traditional use. Even in Western countries there was reversion to brick construction wherever the supply of labour adjusted itself to building demands. The problem of the production of brick is not likely to be so formidable as that of the supply of labour. But there is dearth of supply of cement, iron and timber. So attention will have to be directed to supplementing the conventional building operations by the use of new methods of construction which will employ labour as yet unskilled in building.

It has been suggested to us during our enquiry that pre-fabricated houses would cost only Rs. 6 per square foot as against Rs. 10 per square foot of ordinary brick constructed houses. Another view was that pre-fabricated houses would not be suitable in this Province as they conduct heat and that if thicker walls are built for minimising heat, the question of handling the component parts would be difficult and very costly.

A scheme has been examined by us, of panels of aluminium filled with an insulating compound, which appears to have been put on the market by a Canadian Aluminium Production Company. Metals are in short supply and we have little if any chance of securing an adequate number of these to relieve shortage.

A scheme for rapidly providing concrete houses was mooted but the designs provide for a series of doors placed in juxtaposition and needed some careful inside planning, to make it at all acceptable for the aesthetic sense of the population.

Remedy may lie in standardization and pre-fabrication of parts, such as beams, T-beams, slabs, pillars, frame work in wall units, etc. In fact this was done in Madras as early as 1908-1909 by the Seigwart Beam Company but the firm went into liquidation for want of public support. The Government put up a large number of houses for policemen and the like, of pre-cast concrete blocks but it soon gave place to brick construction on account of costs. Cement and iron costs were low in the mid twenties when RC slab roofs and sunshades, canopies and RC framed and fitted structures like the Keystone buildings became popular but they fell into disuse when the price of cement again rose and cement and steel became scarce.

Building Research.

135. In addition to the efforts mentioned above to reduce the cost it seems to us quite necessary that an organization for building research should be set up to improve the methods of building and examine the possibility of large-scale production of building parts. Pre-fabrication of essential parts, their use and economics should be studied and introduced wherever possible to introduce advanced building technique to improve the standard of building, building materials and the building trade and reduce building costs.

Coal Supply and Transport.

136. In 1945-46 this Province got an allotment of 49,180 tons of coal, coke and slack coal but received only 18,370 tons with a deficit in supply of 30,810 tons due, it is said, to shortage of wagons. A specific allotment of 135 to 140 wagons exclusively for this Province would have given us all the supply. It is understood that the collieries had a supply of 2,700 out of 3,300 wagons demanded—and yet this Province could not secure even 5 per cent of this supply. We consider that the matter should be handled with a greater measure of co-ordination between the parties, the local Government, the Colliery Board and the Railway Board. Alternatively, we shall have to build our own wagons or purchase them and earmark them to the building trade including ancillary manufacture operations. This has been indicated in paragraph 121 under "Cement". Wagon-building pre-supposes that materials for the purpose will be available. Building 140 wagons will require 4,000 tons of steel, etc., and this has to be ensured before we can venture upon a scheme of wagon construction.

The bottle-neck at present is the transport and until this has been satisfactorily solved we shall continue to be bogged and no progress will be feasible.

Steel Supply and Pre-fabrication.

137. Pre-fabricated houses need a lot of steel. Even the smallest unit house conforming to housing standards will require some 1,000 square feet of walling and 350 square feet of roofing slabs and each square foot will require about 2 pounds of steel or say about one ton per house, all in rods of small section and wire.

The total reliable production of steel in India available to the trade at present is 750,000 tons of which, barely one-fifth, or 150,000 tons is available for civilian consumption and the imports of iron and steel rounds in the best pre-war years was hardly 21,000 tons. If this Province gets one-tenth of the total production and imports we get to the pitifully low figure of 75,000 tons. Prefabricated panelled houses are consequently ruled out for adoption upon any large scale. Prefabrication has, therefore, to be limited to building furniture and to a certain extent beams and roofing slabs only.

The pressure on the brick trade can be reduced somewhat by the adoption of pre-moulded cement concrete blocks (hollow) and the composition recommended is 1 : 3 : 8 of cement, sand and hard broken stone jelly, half inch mesh. We commend the construction of "Hollow Blocks" with $\frac{1}{2}$ inch stone aggregate as we consider that the problem of transport of cement is the primary bottle neck and only economy in its use will be fruitful of results.

Black Market in Building Materials.

138. Under conditions of short supply of essential building materials, high prices for them are inevitable. The well-to-do appropriate all the materials available in the market by paying high prices and the poorer go to the wall. Effective and complete control over the prices may prevent black markets. But this cannot be effective unless production and supply are fully controlled at the source. Control on the basis of average production makes black marketing possible. At present, considerable black marketing is going on in building materials. The result is untold hardships experienced in building houses. If black marketing is to be eliminated altogether, it is necessary that the Government should do something effective to control production and distribution. Firstly, the punishment for black marketing should be imprisonment, and secondly, politics should not intervene in the administration of controls.

Central Authority to Distribute Materials.

139. We are of the opinion that a central authority should be constituted to control the allotment of materials for building purposes. The authority should be technically qualified and have adequate experience of manufacturing operations and construction to direct operations in an intelligent manner, so that allotment of unsuitable materials in wrong sequence might be avoided. This central authority should function as an adjunct to the Provincial Housing Board—the constitution of which we are suggesting in a later chapter—should control all materials suitable for building purposes, and, the distribution should be vested in it. So far as bricks are concerned it will be advantageous if the bricks are purchased by the State at fixed prices and distributed on permits to builders. The scheme is outlined below in greater detail.

Control and Distribution of Building Materials.

140. We have seen how, at every stage, we are confronted with the lack of materials, lack of labour, trained labour, in particular, and lack of transport. We have seen how the scramble for materials results in black marketing and the controls on prices or uses become inoperative.

We consider that in respect of certain classes of materials which cannot be procured from any specific agency control will be impossible and abortive. While in respect of materials such as bricks in the City of Madras, tiles, concrete, stone jelly, teak and timber, iron and steel, coal and building furniture, it is possible to institute controls and make them effective. But they cannot be made effective unless the personnel exercising control has a knowledge of the process of building and manufacturing operations involved in the various components that go into the building. Intelligent technical planning is called for and can only be done by suitable trained technical personnel.

In the matter of bricks for instance, coal has to come from Jharia, Raniganj or Singareni. State help is required to secure the allotment of coal from the colliery, the allotment of railway wagons for transport and the allotment of lorries and petrol for transhipment of coal to the brick-fields.

The brick-fields require to be equipped with labour-saving appliances such as, diggers, conveyors, pugmills and brick-moulding machines, both of the pressure or non-pressure type, and equipment to convey the moulded bricks to stacks, loading and unloading kilns, sorting and stacking and technical help to develop them and apply them so as to save labour and reduce the labour shortage. Lorries and petrol to convey the bricks and deliver them at site of work are also required.

In all these State help is needed, and, in order to prevent misuse of facilities provided, a measure of control is an absolute necessity.

To arrange for the coal, it is necessary to get a forecast of requirements of all existing kilns spread over a long term and arrange a programme of deliveries from the collieries and wagon supply to suit the supply of coal.

When intimation of despatch of a wagon is received from a colliery the organization should be in a position to decide on the priority of supply, from returns of stocks, and uses of coal, for actual brick burning and allot the wagon to the most needy, but on payment of full value of coal across the counter. This organization will keep in touch with despatches and see to it that there is no avoidable delay of wagons at the collieries and that wagons are cleared promptly at the receiving shed. This system is analogous to what is done by many of the large export and import agencies.

When a wagon of coal has been assigned to a kiln, the kiln is required to declare its production, immediately it is cleared from the kiln and stacked. The Agency checks stores, pays 80 per cent of the approved cost of bricks, brings the stock on to its register, and passes on the requisition for the next wagon of coal to the coal section.

The brick section allots these bricks to various requisitionists, who pay 100 per cent across the counter and obtain a delivery order for the supply. Copy of the delivery order goes to the relevant kiln, which delivers the bricks and submits the voucher, against which the balance of 20 per cent of the cost is paid. To keep a control over distribution, the Agency is advised by the City Corporation of all sanctions they accord. They also send to the controlling authority a statement of controlled materials required for the construction together with a programme of supply.

Allotments are made on the basis of this sanction dependent only on the progress made, construction and utilization of the materials already supplied on the building.

The scheme is extensive, but is the only means of ensuring that materials are made available and at cheap prices. A small levy of Re. 0-2-0 to Re. 0-4-0 per 1,000 bricks, or the like will amply cover all costs of this organization.

Similar controls will be necessary for the manufacture of cement and its distribution, as also other building fittings and furniture wherever Government help is required in procurement and allotment of basic supplies of raw materials.

Labour.

141. Both skilled and unskilled workers are employed in the building trade. Rates of wages are $2\frac{1}{2}$ to 3 times higher than those that prevailed during the pre-war years. While it may not be possible to make any substantial reduction in them on account of the general price level, it seems to us necessary that steps should be taken to increase the quantity and improve the quality of the work as also the number of workers employed in building trade. There is a great paucity of technical men for lower subordinate supervision and control of labour. A large expansion in the grade of overseers and of foreman's class of master builders is a great desideratum. The courses for overseers, which had been abolished at the Engineering College, should be re-established and the period of the courses limited to a maximum of 3 years. A public examination to which other institutions like the Chengalvaroya Naickar's Institute may train and put up candidates should be instituted so as to enable private enterprise to fill the needs of this class of technicians. Adequate facilities for the training of foreman's class of master-builders, carpenters and the like should be developed. These, when trained, should be eligible for being licensed as such. For the class of master-builders, carpenters and the like, training may be open to men with primary educational qualifications and to workers employed in building trade. The training course should be somewhat of the same character as trade technical training given by the Army and will ordinarily extend over a period of 12 to 18 months. It, therefore, seems to us desirable that building trade schools are started in important centres where such training can be given to workers.

Provision of Amenities.

142. It is necessary that when any area is developed as housing area the principal amenities such as roads, water-supply, drainage, sanitation and street lighting are provided before the construction of houses is launched upon. This should invariably be done by the local authorities and steps should be taken to see that failure of the local authorities to do this does not hamper progress. Laying of a proper road, for instance, helps quick transport of materials. Laying of water-supply saves costs of water-supply for construction and reduces costs resulting in cheaper houses. The reduction in cost may be slight, but the cumulative effect of small savings must be considerable.

Finance.

143. Large-scale housing schemes necessarily involve a good deal of capital. Government should draw up a scheme under which it will be possible for them to arrange for the provision of funds both for themselves as well as other agencies undertaking construction. Allocation of funds may be divided into two classes—direct construction and assisted construction. As regards direct construction, it is pointed out that Government should provide housing for its own employees. The Government should draw up a plan extending over a period, say 20 years, by which time they should provide housing for all their

employees. We consider that priority in the matter of housing should be given to those drawing less than Rs. 200 per mensem. Similarly municipalities and other local bodies and big employers should be required to provide housing for their own employees assisted where necessary by subsidies and loans from Government. For the general public belonging to the low income groups in the City, other urban and semi-urban areas, the Government should launch housing projects on a five-year programme.

Schemes Proposed.

144. A composite programme for the financing of house-building schemes are worked out and attached. (Appendix XII.)

Necessity for Extensive State Aid.

145. It would be interesting to see how we compare with other countries in the matter of income per family; the distribution of the expenses, the rents paid, the cost per tenant, and the apportionment of finance between the several bodies :—

	New York.	Sweden, 1923.	Sweden, 1933.	Bombay, 1932-1933.	Ahmeda- bad, 1933-1935.	Shahabad, 1925.	Nagpur, 1927.	Jubbulpore, 1927.	Rangoon, 1928.	Madras, 1933.
Family income per mensem	Rs. 435	3,000	Kr. 4,000	Kr. 50-1-7	46-5-0	59-14-10	58-8-0	37-5-11
	Rs. 2,667	Rs. 3,555								
Percentage of expenditure to total income on—										
(1) Food	42.7	35.9	46.60	49.31	49.25	64.10	64.00	52.70	52.63
(2) Fuel and lighting	4.3	4.0	7.11	6.65	9.60	9.62	7.95	5.20	6.67
(3) Clothing	13.9	13.0	7.75	9.12	11.86	10.70	10.86	10.60	4.50
(4) House Rent	20 to 23 per cent.	13.9	17.9	12.81	10.97	6.27	1.92	1.44	13.90	11.14
(5) Miscellaneous	25.2	29.2	25.73	23.95	23.02	13.66	13.75	17.60	25.03
Cash value of house rent	90	6.40	5.00	2.60	8.15	4.13

The United States Housing Act, 1937, provides for a loan equal to 90 per cent of the cost of housing at interest rates of 3 to 3.25 per cent, bonds to mature in 60 years.

In the public market, bonds sold privately equalled 2.128 per cent interest and saved 23 dollars out of every 45 dollars bound by the charge to private agency, even though private loans were repayable in 45 years.

The buildings were at first exempt from property tax, but paid 5 per cent of the receipts to the City in lieu. This has been since increased to 10 per cent.

The cost of employees for maintenance, collection and social service cost Rs. 307 to Rs. 530 per annum met out of the rents, and each employee looked after 6.97 to 17.8 dwelling units. The receipts from rent covered only 39 per cent of the debt charges. Sixty-one per cent was met by the City.

The ideal ratio of rents to income is taken as 20 per cent although United States Laws prescribe a maximum of 16.2/3 per cent.

The following indicates the degree of State help in various countries in Europe :—

	Private enterprise.	Co-operative and public utility.	Municipal.	State subsidies.
	PER CENT.	PER CENT.	PER CENT.	
Sweden	83.0	11.4	5.6	£ 3,249,304
Holland	75.0	17.8	7.2	£ 5,973,946
Germany	58.8	26.2	15.0	..
Great Britain	56.56	12.9	20.60	530,553,580 (1919-1936)
		(Subsidised private enterprise)		

It will be seen from the above that even with the high rentals that prevail in the western countries, private capitalists find it does not pay to put up what to them is low rent houses. High subsidies, municipal, local or State, are necessary to enable any progress to be made at all. The so-called low rent housing in New York cost Rs. 16,622 to Rs. 20,866 per family and the rents are Rs. 84 to Rs. 105 per month which the minimum incomes of Rs. 325 to Rs. 545 make it possible to pay.

	Cost of house.	Income of family.	Rents paid.	Percentage of rent to cost of house.	Percentage of rents to cost of houses.	
	RS.	RS.	RS.	PER CENT.	Per mensem.	Per annum.
					PER CENT.	PER CENT.
New York	18,750	435	95	2.32	0.406	4.872
Madras	5,000	50	6	1.00	0.12	1.44

It will be found from the above why the Building Financier fights shy of constructing low rent houses in this country, even though area for area the price of a house is cheaper in this country than in America and why such extensive State Aid recommended in our report becomes necessary.

Enforcement of Time Limit for Construction.

146. For the construction of a new building in the area of a local authority like a municipality, it is necessary to obtain a licence for the construction before the work is undertaken. This licence also prescribes a time limit, ordinarily one year, within which, the construction of the building should be completed. Generally, however, the construction is not completed within the time allowed and the local authorities do not seem to take note of such lapses. With a view to expedite the construction of buildings, the local authorities should take courage to enforce the time limit. But a similar provision does not exist in the City Municipal Act and the rules framed under it. These should be amended so as to make provision for a similar control in the Corporation limits. The large number of plinths and foundations left incomplete in the Corporation limits, for years, sometimes, as much as 15 years, would not be so left, if such a provision had existed and the Corporation enforced it.

Exemption from Property Tax as an Impetus to Private Building.

147. We have shown how the problem of housing cannot be satisfactorily solved unless the efforts of the State, the local authorities, the employers and the co-operative and private enterprise are mobilized for the purpose. We have also explained the need for stimulating co-operative and private enterprise in this direction at least in respect of middle-class housing. While we lay special stress to the necessity for State initiative and State Aid in respect of low-rent housing, we consider that the local authorities may aid housing development of the middle-class variety as they would be ultimately augmenting their revenues by such development. One of the methods by which private building can be encouraged is by the exemption of taxation of new buildings for a limited period. We recommend that municipalities and panchayat boards should exempt the levy of property tax for a period of five years on houses which are constructed within the next two years in order to give an impetus to private and co-operative building enterprise. We recommend also that no betterment contribution should be levied in areas where the local authority or the improvement trust has not incurred any expenditure towards development or improvement.



CHAPTER IX.

HOUSING STANDARDS AND RENTS.

Need for Minimum Housing Standards.

A house like one's dress varies according to one's tastes, habits, climate and environmental requirements of its occupants, such as, space for cooking, sleeping, storing, adequate protection from weather and it should have water-supply, sanitary facilities, light, ventilation and provision for washing and drying. The space available in the house should be so distributed as to satisfy the several needs mentioned above and ensure cleanliness and decencies of life.

A house like one's dress varies according to one's tastes, habits, climate and environments. Things which are acceptable to one generation are not acceptable to the next. This is true of housing standards as of everything else. Again the luxuries of yesterday are gradually becoming the necessities and conveniences of to-day and may well become the indispensables of to-morrow. It is, therefore, impracticable to fix a common standard of housing suitable to all places or localities in the Province and adaptable to all classes of people or any particular class of people or for all times. Nevertheless, minimum human needs and minimum hygienic requirements applicable to all people at all places make it necessary to fix an irreducible minimum standard of housing. The minimum standards should be such as to enable a family to live and bring up children in full health of body and mind. The existing housing conditions of the poor are extremely unsatisfactory and fall far short of decent human standards. Overcrowding to an abominable extent is common as the provision of dwellings to meet their demand is not adequate. Dwellings are small, rickety and badly ventilated. They are also defective in design, lack privacy, protection against weather and sanitary conveniences and do not afford the decencies of life. A large portion of the population live in unhealthy dwellings many of which are of sub-human standard. "The greatest opportunity open for raising the general standard of living" says Lord Beveridge in his book on *Full Employment in a Free Country*, "lies in better housing, for it is in their houses and in the surroundings of their houses that the greatest disparities between different sections of community persist to-day." To-day, the worker is getting more and more conscious of his key position in society and is no longer content with his lot. There is a growing demand from the workers for the decent housing and environment.

Fundamental Conceptions.

149. The character and standard of housing provided will determine the lives of people for generations to come. In home life, good housing will create happiness and provide a good atmosphere for the healthy growth of the rising generation. In social life, it will create the atmosphere of family life and inculcate good morals. Unhealthy or overcrowded dwellings are responsible for untold social ills, the consequences of which may last for generations. In national life, the housing, as a whole, will form a national asset of permanent value. Fundamental human needs and hygienic requirements require to be satisfied in housing, while essential structural requirements of houses are necessary to satisfy climatic conditions. The first problem, which is required to be settled in any housing scheme, is what minimum scales of accommodation and amenities are required for healthy living. Dwellings must provide minimum conditions regarding habitable space, ventilation, lighting, sanitation and privacy. Availability of social, educational and recreational amenities, community life, bazaar facilities and other requirements should also be ensured. It is improper for any community to be content with whatever shelter it can get. All families, even the poorest, must be so housed as to safeguard their physical and moral well-being.

In several of the houses occupied by the poor and the lower middle classes the same room is used for cooking, dining and as living or bed-room. The conditions of living in these houses are extremely unsatisfactory. Such one-room tenements are impossible to be kept sanitary. They lead to the surrounding space being rendered filthy. They lack privacy for family life. The kitchen must always be separated from the living room at least by a partition wall and one-room tenements as family residences should disappear. This is also the recommendation of the Bhore Committee, as we observe later in this chapter.

Housing Standards Adopted or Recommended by Different Authorities.

150. The standards adopted or recommended by different authorities are :—

I. *British Standards.*—The British Housing Act, 1936, lays down the following minimum standards :—

(1) The number of persons permitted in a house when it consists of—

						PERSONS.
(i) One room	2
(ii) two rooms	3
(iii) three rooms	5
(iv) four rooms	7½

(2) Floor area and cubic space per man—

(i) Room exclusively used as a dwelling house—

Floor area per man	40 sq.ft.
Cubic air space	400 c.ft.

(ii) The number of persons per room in relation to floor area of—

					PERSONS.
110 square feet or more	2
90 to 110 square feet	1½
70 to 90 square feet	1
50 square feet	½
Under 50 square feet	Nil.

A child under 10 years is taken as half an adult and one under one year, is not counted.

(3) Separation of sexes above 10 years of age is essential. This means that no two persons over 10 years of age may sleep in the same room, unless they are of the same sex—exception being made of course in the case of married couples.

II. Calcutta Municipal Standards—

Minimum floor area of a residential room—80 square feet.

Minimum height—10 feet from floor to underside of beam.

Plinth height—2 feet above the centre of road.

Window openings—one-fifteenth of floor area.

III. Bombay Municipal Standards—

Floor area per person—25 square feet.

Cubic air space—250 cubic feet.

IV. Madras City Standards.—The following are the principal building regulations laid down by the Madras Corporation:—

(1) *Level of floor.*—(i) The ground floor of every building constructed or reconstructed from the ground level shall be constructed and placed at such level as will admit of—

(a) the construction of a drain sufficient for the effectual drainage of the building into some public drain or sewer at the time existing or projected; and

(b) the provision of the requisite communication with some sewer into which the drainage of the building may lawfully be discharged at a point in the upper half of such sewer or other drainage system into which its drainage may be lawfully discharged.

(ii) The distance between the building line and the street alignment shall not be less than four feet.

(iii) The plinth of a dwelling house shall be at least two feet above the level of the centre of the nearest street.

(2) *Height of a building.*—(i) No dwelling house shall be erected or raised to a greater height than sixty feet as measured from the level of the centre of the street in front:

(a) in the case of pitched roof, up to the tie beam of the roof;

(b) in the case of flat roof, up to the surface of the roof.

(ii) In the case of a pitched roof, the roof above that height shall rise at an angle not more than forty-five degrees.

(iii) In the case of flat roof, a parapet of not more than three feet in height may be constructed above the maximum height of 60 feet.

(iv) If the width of the street does not exceed twenty-six feet the building shall not be erected or raised to a height greater than one and a half times the width of the street.

(v) If the width of the street exceeds twenty-six feet the building shall not be erected or raised to a height greater than forty feet.

(vi) If the width of the street exceeds 40 feet the building shall be erected or raised to a height greater than the width of such streets.

(vii) Where the building abuts upon more than one street its height shall be regulated by the width of the wider of such streets so far as it abuts upon such wider street and also at a distance of 80 feet from such wider street so far as it abuts upon the narrower of such streets.

(3) *Size and ventilation of inhabited rooms.*—Every room in a domestic building which is intended for human habitation—

(a) shall be in every part not less than 9 feet in height measured from the floor to the under side of the beam on which the roof rests;

(b) shall have a clear superficial area of not less than 80 feet; and

(c) shall be provided for purpose of ventilation, with doors or windows opening directly into the external air or into a verandah.

(4) *Dust bin.*—For every domestic building there shall be provided in such building in the compound or other place appurtenant to such a building permanent receptacle for the deposit of all rubbish and filth other than nightsoil and sewage accumulating in such building and such receptacles shall be so situated as to be easily accessible to the Corporation scavenging staff.

(5) *Latrines.*—No domestic building shall be constructed or reconstructed unless privy or water closet is provided for the use of the persons inhabiting the buildings.

Every domestic building constructed or reconstructed within the sewered area in the City shall be provided with a water closet. The minimum water closet accommodation shall be one closet for every fifteen persons inhabiting the building.

(6) *Open space.*—(i) Every domestic building shall be so constructed that every living room therein shall have at least one side abutting for a length of not less than 8 feet on an open space either external or internal. Such open space shall ordinarily be not less than 6 feet in width.

(ii) The side of every such room abutting on an external or internal verandah shall have at least one-fifth of the area of the side or 15 square feet whichever is greater of its area occupied by doors, windows or ventilators.

V. Bhore Committee's Standards.—The standards recommended by the Health Survey and Development Committee (Bhore Committee) are extracted below:—

(a) The minimum accommodation required per head is 100 square feet for an adult and 60 square feet for a child. It may be difficult to ensure this for all within any measurable time. However, in any new construction, the minimum floor space for a room should be 120 square feet.

(b) The proportion of window to floor area in living rooms will vary in accordance with climatic conditions and the requirements of light and ventilation. As however uniform standards in India may not be possible, the Provincial Governments should prescribe and enforce adequate standards in these matters.

(c) The use of single-roomed tenement by a family should be condemned as it is obviously unhealthy and renders privacy and decencies of family life almost impossible. No house or portion of a house intended for occupation by a family should consist of less than two living rooms, with a separate kitchen, a bath room and latrine and in the warmer parts of the country a verandah. In hill stations, this verandah may be substituted by another room. One-room tenements should be restricted for occupation by single persons and should be adequately provided with common kitchen, bath and latrine accommodation.

(d) The portion of the built-up to the total area of building land should be smaller in rural districts and small towns (panchayats and small municipalities) than in the larger towns. In the former, houses should have sufficient open land adjoining them for the erection of a cow-shed and for the disposal of refuse and manure.

(e) The minimum set-backs, side and rear spaces, should be regulated by local authorities in both rural and urban areas.

(f) The walls, floors and roofs of houses should be so constructed as to prevent dampness and also provide insulation against the easy transmission of heat, cold and noise. In the design, as few opportunities as possible should be given for the harbourage of vermin.

(g) There should be statutory provision for water-supply, drainage and refuse collection for every house. The standards to be prescribed will have to vary according to the facilities available, but they should, in all cases, be approved and subject to inspection by the local authorities.

(h) The provision for excreta disposal will also vary, but certain minimum standards should be prescribed and enforced. Wherever land is available and the owner of the house can afford the expenditure, the health authority should enforce the installation of the water carriage system, small septic tanks and soil absorption systems for the effluent being provided. Such disposal is eminently desirable in respect of institutions such as hospitals, jails, schools and students' hostels. Apart from enforcing such provision by law, every encouragement should be given to enable owners, wherever land exists, to provide themselves with this sanitary convenience which, from the point of view of construction and maintenance, is not costly.

The above standards should be embodied in the building codes and must be made gradually applicable to all new house construction or alteration of existing houses whether undertaken by public or private agency, by industrial concerns, building societies, Governments, municipalities, private contractors, etc.

In a large housing construction programme temporary provision will have to be made for the housing of labour employed in the works. Less rigid standards than those for permanent housing will be prescribed for temporary establishments.

It is further recommended that, when the Revenue or other departments of Government make grants of crown lands for housing to individuals or communities, a condition should be laid down and enforced requiring that the houses should be built according to standards prescribed for the area concerned.

VI. Public Health Sub-Committee's Standards.—The minimum standards necessary for the construction of dwelling houses and the materials to be used in such construction were considered by a special Committee of the Public Health Sub-Committee formed in connexion with the Post-war development of this Province. The Sub-Committee has made the following recommendations :—

“(1) A house has an average of 5 inmates which may be assumed to consist of four adults and one child. At the rate of 70 square feet for each adult member the minimum floor space required for a dwelling house may be fixed at 340 square feet. This will include all occupiable floor area including verandahs.

(2) The minimum floor area in any living or bed room should not be less than 120 square feet. The height of those rooms should be not less than 9 feet from the floor level. The floor level of the rooms should be generally at least 18 inches above the level of the adjacent street.

(3) The health of the inmates of dwelling houses is very much dependant on adequate ventilation of rooms and proper perfilation of air within rooms. Thorough ventilation and free passage of air should be ensured in the living and bed rooms, and, as far as possible, windows and ventilators should be provided on opposite sides of the rooms. The aggregate area of the openings provided by windows and ventilators should be at least one-sixth of the floor area of each room. Every window should have upper and lower shutter leaves so that the lower ones may be kept closed with upper ones alone open whenever necessary. It is an additional advantage if windows and doors have fixed ventilating heads.

(4) A small compound attached to the house is necessary. An independent open bath and a latrine preferably of a flush-out type, should be provided at a corner

of the compound screened from the view of the living rooms and sufficiently away from the well if the house is to have its own water-supply.

(5) It is better to have a common protected source of water-supply for a group of houses forming the hamlet or village.

(6) The disposal of house drainage will depend on the arrangements for drainage for the particular scheme of housing as a whole. Subject to this, suitable arrangements must be made in each house for leading off all domestic sullage by the provision of a sanitary type of drain.

(7) At a convenient place in the compound, rubbish bins of suitable size and design should be provided on low masonry platforms about 2 feet by 1½ feet.

(8) When it comes to the matter of drawing up a design, difficulties arise. A dwelling house is as expressive of the ideas of the individual as an article of dress. Habits and customs vary as do also climatic conditions. A great variety of tastes has to be catered for, which is by no means easy. Any design which provides the 340 square feet of occupiable floor area and which generally incorporates the other features mentioned above and which is acceptable to the local authority in charge may be adopted for any particular scheme of housing. To ensure comfort and reasonably healthy living conditions, there should be at least one main room of about 100 square feet and a kitchen of about 60 square feet fully walled. The other 180 square feet may be in the form of a "kudam" and a living space with a minimum of walling but adequately protected from the weather. The living space will be used for sitting during the day and for sleeping at nights for relations or guests common to Indian families.

(9) The materials most suited to each case will be those available near the site. Brick or building stones are available in most localities and would make suitable material for the walls. Bricks should be preferred to stone as giving warmer rooms in winter and cooler rooms in summer. Brick or stone may be in lime mortar and lime cement up to basement level and above that in mud mortar wherever suitable for purposes of economy. Plastering is essential and should be in the lime cement, combination mortar. As the floor should be also warm, brick concrete in combination with lime cement mortar is suggested, the cream in concrete being rubbed smooth on the top. Doors and windows will be of wood where it is easily available but as timber shortage is likely it may be necessary to reduce wood-work to a minimum and provide pre-cast concrete frames and cement asbestos panels for shutters. Roof may be of Mangalore tiles over wooden or palmyra rafters and country wood reapers. In addition, flat tiles should be provided for the main room and living space. Ridge ventilating tiles may be also provided. Where facilities exist, it would be very much better to convert the roof into reinforced concrete or Madras terrace roofs thus making for greater permanency and cleanliness. A type of roof composed of galvanized iron sheeting covered over by a thin layer of cement concrete may also be tried as an experimental measure.

(10) One difficulty is the question of cost. Having regard to the level of national income and consequent standard of living and heavy financial commitments that a large scheme involves, cost cannot be altogether ruled out of consideration. The cost of a house with the materials recommended and the floor area proposed is expected to be about Rs. 1,100 at the pre-war rates, but it may be more or less according to varying local conditions.

VII. Standards recommended by the Industrial Housing Sub-Committee of the Standing Labour Committee of the Government of India—

(1) *Minimum accommodation.*—A house to accommodate an industrial worker and his family should comprise at least—

two rooms,

a kitchen with storage space for food and fuel,

an independent bath room,

a lavatory,

verandahs, preferably both in front and at the back, and

a court-yard in the case of single storey houses,

and be provided with an adequate supply of water and where possible with water-borne sanitation.

(2) *Standard of accommodation.*—(a) The total floor area of the two main rooms, exclusive of verandahs, should not be less than 240 sq. ft.

(b) The height of the two main rooms should not be less than 10 feet measured from the floor to the lowest part of the ceiling, and neither of the two main rooms, should have a cubic capacity of less than 1,000 c.ft.

(c) At least one verandah, and preferably both, should be not less than 7 feet wide.

(d) Shelves should be provided in the kitchen for keeping utensils and built-in-shelves or almirahs provided in the main rooms.

(3) *Standard of ventilation.*—(a) An efficient form of top ventilation should be provided.

(b) The main rooms should be provided with doors and windows providing adequate light and through ventilation.

(c) It is most desirable that houses be so designed that the two main rooms are not one behind the other. Where this is not possible, ample ventilation to the outside air should be provided in both rooms.

(d) The kitchen should be provided with a chimney or a flue and a well designed chulah economical in fuel.

(4) *Standard of lighting.*—(a) The window opening in each of the main rooms and in the kitchen, exclusive of doors and opening to the outside air, should not be less than 10 per cent of the floor area of the room.

(b) Electric light should be provided wherever possible.

(c) Every house should be white-washed at least once a year.

(5) *Sanitation and drainage.*—(a) A family lavatory, not a common lavatory, is to be preferred on all grounds social and hygienic. It is frequently stated that when lavatories are provided they are not made use of. There is a great deal of evidence that where such circumstances exist the failure to utilize proper sanitation lies in objections to the use of common latrine, poor maintenance and a low standard of cleanliness. Family latrines where they have been provided have rapidly become very popular.

(b) All drains other than sullage drains, which must be installed underground, should be "pucca" and, unless there are exceptional circumstances justifying some other course, covered and underground.

(6) (a) House should not be built back to back and it is most desirable that blocks of houses be limited in size, and wherever possible laid out on the lines of a garden city.

(b) Houses should be allocated on the basis of one family to one house. Any family house, remaining surplus after meeting fully the requirements of married workers may be allotted to single workers on the basis of four workers to a house.

(c) Provision against subletting and taking in boarders should be made by formulating suitable tenancy conditions and providing adequate machinery for their enforcement.

Our Recommendations on Housing Standards.

151. We are in general agreement with the recommendations of the Bhoze Committee, the Public Health Sub-Committee and the Industrial Housing Committee detailed above subject to the following modifications:—

(1) *Strength of a family of average size.*—The average number of persons per house in the Madras Province as revealed by the census figures of 1941 is 5.37. For the purposes of this report we have adopted the strength of an average family as six consisting of husband and wife, three children and a dependent relative.

(2) *Minimum living space.*—Having due regard to the several housing standards mentioned above, we recommend that the minimum floor (carpet) space required for a dwelling house of six inmates should be 340 sq. ft. including verandahs and the mean floor area per adult 75 sq. ft. and 40 sq. ft. per child under ten years.

(3) *Minimum floor area of a living or bed room.*—The minimum floor area of a living or a bed room should preferably be 120 sq. ft. but in no case should it be less than 80 sq. ft. and at least one room should not be less than 120 sq. ft.

(4) *Height of room.*—The Calcutta Corporation specifies a minimum height of a residential room to be 10 feet from floor to underside of beam. The Industrial Housing Sub-Committee of the Standing Labour Committee, Government of India, recommends that it should not be less than 10 feet from the floor to the lowest part of the ceiling. We accept the recommendation of the Madras Public Health Sub-Committee of the Post-War Reconstruction Committee which is 9 feet from floor level. We consider that the minimum standard of 9 feet laid down by the Sub-Committee should be regarded as being applicable to sloping roofs, the height of 9 feet being measured at the junction of the outer wall and the roof on the inner side of the house. In the case of flat roofs it is our considered opinion that the minimum height should be 10 feet.

(5) *Plinth level.*—The minimum plinth level should be 18 inches above the level of the centre of the nearest street as suggested by the abovementioned Committee.

(6) *Doors.*—Doors are of various widths and heights depending, of course, on the position occupied. External doors should, as a rule, be wider than internal ones. Outside doors are generally hung so as to open inwards. Inside doors should open away from anyone entering the room and must be hung so as to protect the room as much

as possible from draughts when open. In bed rooms the doors should, when open, screen the portion of the bed and in bath rooms and water closets, to secure privacy even when accidentally open.

The height of the doors should not be less than 6 feet 3 inches but should preferably be not less than 6 feet 9 inches for main doors. The width should not be less than 3 feet for main doors but may be as little as 1 foot 9 inches for bath rooms.

The following standard specifications were suggested and have been accepted by the trade :—

(a) The basic outside dimensions should be as follows :—

(i) For doors without ventilating heads—height (no sills) 6 feet 9 inches, width 4 feet.

(ii) For doors with ventilating heads—height 8 feet 6 inches (no sills), width 4 feet.

(b) (i) Doors 2 feet 6 inches may be single-heaved and used for dressing rooms, outside doors for kitchen, doors to bathing rooms, etc.

(ii) Doors with 1 foot 9 inches width may be used for lavatories, water closet, fuel room, etc.

(c) Door shutters should be standardized as follows :—

(i) External doors—Panelled shutters—glazed $\frac{1}{3}$ top section if there are no ventilating heads.

(ii) Internal doors—panelled shutters—except for bath rooms and water closets which may be braced and battened for economy.

(7) *Windows and ventilation.*—Windows are required either for light or ventilation or both. So these should be big enough to admit sufficient light, sunshine and air for disinfecting purposes, as well as to make the rooms cheerful. The area for windows and ventilator should, in no case, be less than one-sixth of the floor space. But it is however desirable that ventilators when provided should not be reckoned in the ventilating area.

The following standard specifications were suggested and have been accepted by the trade :—

(a) The basic dimensions should be as follows :—

(i) For windows without ventilating heads—height 4 feet 6 inches by 3 feet 6 inches.

(ii) For windows with ventilating heads—height 6 feet 3 inches by 3 feet 6 inches.

(b) External windows—panelled shutters—opening outwards with glazed shutters on the outside for all outer windows.

(8) *Kitchen.*—This should not be less than 60 sq. ft. in area. If combined with stores, it should have an area of at least 80 sq. ft.

(9) *Bathing room.*—The bathing room should not be less than 24 sq. ft. or of the dimensions 6 feet by 4 feet.

(10) *Lavatory.*—The lavatory should be of the minimum size of 16 sq. ft. and not less than 3 feet in width. Water-closets should be provided wherever feasible. Dry latrines should be avoided as far as possible. Aqua privy or similar septic type latrines should be used in preference.

(11) *Kudams or verandahs.*—It is essential that kudams or verandahs, when provided, should be adjacent to the kitchen wherever possible, as the house-wife has to spend most of her working hours there.

(12) *Amenities to be provided for each house.*—The following amenities should be provided in each house as prescribed :—

(i) A built-in-cup-board in each bed and living room.

(ii) Pegs for hanging clothes.

(iii) Shelves in the kitchen for keeping utensils and supplies.

(iv) A raised platform for fire place with a chimney to serve as smoke outlet.

(v) Adequate supply of pure water.

(vi) Compound wall or line fence.

(vii) Independent bath rooms, bath water being led away to underground drains or distributed over as large an area of land as possible.

(viii) Latrines fully sanitated and connected to underground drains or septic tanks and dispersion trenches.

The standards recommended above should be applicable to all construction whether undertaken by public or private contractors, individual, building societies, Government, local bodies, etc.

Designs.

152. The Madras Corporation has prepared four designs, A, B, C and D for the middle class housing and one another design for workers. The Building Designs Committee has prepared plans for different income groups and officers of different departments.

The Concrete Association of India has also prepared certain designs for workers' houses. We consider that the plans prepared by the Madras Corporation for the workers, designs E-1, E-2 and F of the Building Designs Committee and those of the Concrete Association of India appear suitable to us for low-income groups. Copies of these designs are attached (Annexure No. III.)

Overcrowding.

153. Having regard to the standards we have outlined above, we consider that overcrowding should be defined as an infringement of any one of the standards so laid down. We are conscious of the fact that the present difficulty of housing accommodation renders it impossible for the municipalities to enforce the legal provisions for the abatement of overcrowding. With an increase in housing accommodation, it should be possible to insist on a rigid enforcement of these rules. This is in conformity with the recommendations made by the Health Survey and Development Committee (Bhore Committee). Future house building activities should avoid the formation of slums of the future.

Plans to be Prepared by Licensed Technicians.

154. We consider that the designs and lay-outs of houses should not infringe the principles of Town-Planning and Architecture. In order to ensure the adoption of correct standards, such as we have recommended, we consider that it is necessary that local authorities should insist on the lay-outs and building plans submitted by the builders or owners of buildings, should be prepared by qualified architects, engineers, draughtsmen or surveyors licensed for the purpose.

Registration of Practising Architects and Engineers.

155. A law should require the registration of practising architects and engineers as in the case of medical practitioners. A schedule of fees for these architects and engineers should be prescribed on lines similar to those specified by Architectural and Structural Engineers' Institute. A register of qualified and licensed architects should be maintained by all municipalities and major panchayat boards for the purpose. Municipalities and local bodies should employ adequate Town-Planning and Building Inspection staff to attend to all duties of town-planning, housing and slum clearance and prompt disposal of lay-out and building applications, to enforce Town-Planning and Building Regulations inclusive of preventing encroachments on public and private works and also attend to tree-planting and lay-out and maintenance of parks and gardens and of public playing and recreation grounds, etc. The absence of adequate staff led to considerable delays in the disposal of building applications in the past, hampering development. Housing development and slum clearance improvement in the country and towns and villages cannot be effectively carried out without employing an adequate number of trained hands in town-planning and housing.

Training of Town-Planning Personnel.

156. For giving the town-planning personnel, employed by the local bodies, adequate training, diploma and licentiate courses in town-planning including building construction and architecture should be instituted. These courses could with advantage be included in the Colleges of Engineering, and other technical institutions of the Province.

Density of Housing.

157. The building regulations of the Madras Corporation require that the minimum size of a house-site in any area coming under the Town-Planning scheme should not be less than $1\frac{1}{2}$ grounds (or 3,600 sq. ft.). Every house must be built on a site of adequate dimensions with sufficient open space for kitchen-gardening, etc., and a minimum open space of five feet around it. We consider that ordinarily the density should be not more than 18 houses to the net acre in the city and big towns, and 10 to an acre in agricultural areas. The proportion of built up area to the site area should not exceed 1:4. Adequate open space should be left for parks, playground and for other communal amenities in addition. This should apply not only to the city, but also to the municipalities in the mufassal also. In the case of one-ground plots, the height of a building should be restricted to two floors or 25 feet.

Tenement Buildings or Flats versus Single Family Houses.

158. In the larger towns, multi-family houses or tenement buildings predominate, while in towns of smaller size and in villages, houses are constructed exclusively for single families. The multi-family houses have generally two or three floors; the construction of larger number of floors is not generally preferred. The space available for living purposes in multi-family houses of more than one floor may not be necessarily less than in a single family house. All rooms are on the same floor with the convenience that they

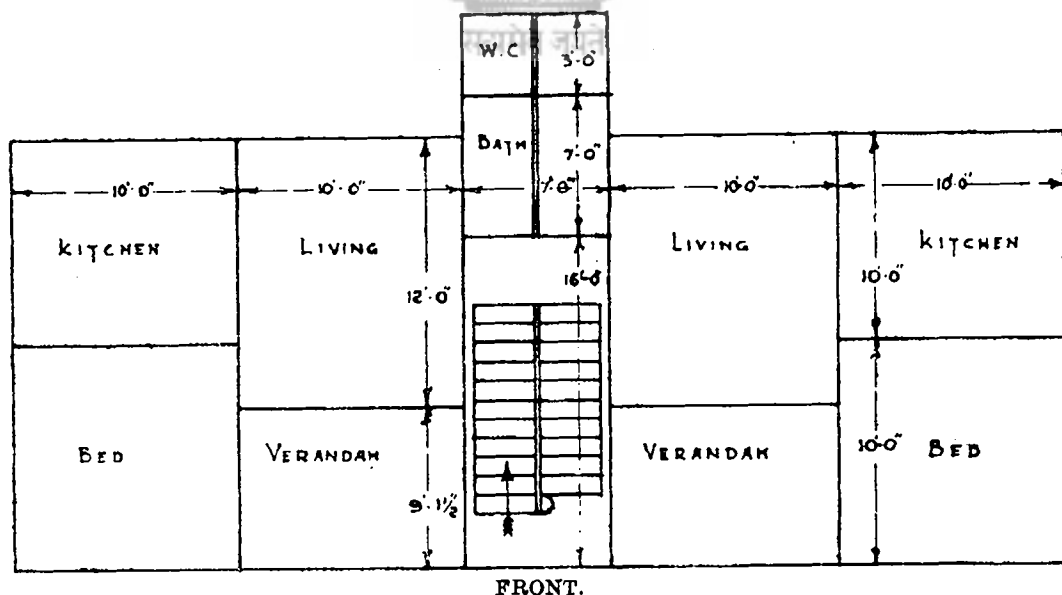
can be reached without going upstairs or downstairs. These multiple houses seem to offer a way out of the two great difficulties, viz., the extreme scarcity of building sites and long leads to places of work or business.

Disadvantages and Inconveniences of Tenement Building or Flats.

159. The disadvantages of a multi-family flat however out-weigh its advantages. The construction of blocks or flats restricts to some extent the penetration of light. They deprive the occupants of the lower floors of fresh air. There will be no open space for gardening or playground for children for those living in the upper floors. These blocks with their common stair cases and entrances assuredly contribute to the spread of contagious diseases like tuberculosis. From the point of view of social life also, they are not desirable. The relations which grow between the different families having a common staircase are often not happy. Moreover, common spaces may give occasion for quarrels which may have all kinds of disagreeable and even disastrous consequences to family life. Family life itself can never be as intimate as in a house occupied by a single family. Lastly multi-family houses with flats breed a sense of temporary sojourns and encourage frequent moves and the migration of the population. When this form of dwelling is the only one commonly available, a worker is completely precluded from becoming the owner of his home or creating a family property whereas the system of single family houses gives him every facility in this respect. The fact of being the owner of his dwelling exercises a beneficial influence on the occupant, for, it encourages thrift, cleanliness and the love of the home; and the opportunity of becoming a house owner is of definite social and economic importance. These advantages will be absent in a multi-family flat, the building of which should not be resorted to unless absolutely necessary.

Circumstances under which Tenements and Flats may be Built.

160. Considering the climatic conditions and the comparative low cost of land in the Province, we are of opinion that vertical development is unnecessary. But in congested localities like the distribution of a very large body of workers adjacent to factories in which they are employed and in other congested localities it may be necessary to adopt vertical development so as to avoid long leads to places of business. It may also be necessary in places to permit vertical development so as to get as much free garden areas as possible to act as lungs. The utmost which we consider should be allowed are flats of four dwelling units, two on the ground floor and two on the first floor with a main stair case in between. This will permit of the most economical distribution of space. While we have considered all the designs available we consider an arrangement somewhat as sketched will be suitable for convenient distribution of space.



Development of Self-Contained Colonies or Settlement.

161. As contiguous plots of land of large extent may not be available in the City or in large towns the development of colonies which should be self-contained will depend upon the area of land available. The size of a colony, if formed, may range from 100 to 1,000 houses to provide accommodation for about 500 to 5,000 people in each colony. In suburban areas however where open land may be available in large extents, the colony may contain about 1,000 houses of varying accommodation suitable for families of different sizes. Any colony developed should provide for a balanced distribution of sites for different income groups, domestic service and adequate shopping facilities and other amenities not being forgotten.

Amenities in New Development Areas.

162. Each colony should provide for a primary and adult school, health and welfare centre, romping ground for children, play fields for not so young, a dispensary, a reading room, a meeting place, a co-operative store, a market, a post and telegraph office, administrative buildings, cattle shed and other necessary amenities. As far as possible milch cattle should be accommodated in one central place, divided, if necessary, into a number of units and tended by the community centre so as to ensure sanitary conditions. In the open spaces reserved for parks and gardens, it is desirable to encourage co-operative agriculture of garden lands, especially in rural areas and the ideas, 'grow more vegetables' for nutrition, 'grow more fruit' for health and 'grow more flowers' for beauty, are infused into the minds of people.

It has been brought to our notice that quite a number of lay-outs are held up on account of the high cost of the provision of amenities such as improved surfaced roads, water table, drainage, sewers, etc. We consider that for the development of any area as a building scheme, it is desirable to restrict the improvements in the first instance to plain Macadam roads and sanitary and water-supply amenities; the improved surfaces and the provision of water tables, if necessary being deferred to a later date as and when materials become available, the owners, however, being still liable to meet the cost of such amenities as and when executed. Necessary provision should also be made in the Municipalities Act, to cover cases where provision of the amenities are delayed by the public bodies concerned for reasons not beyond their control.

Hostels for Single Men and Women, Boys and Girls.

163. In the Madras City there is a very substantial part of the population composed of young men and women who have come in pursuit of education. They also need housing and should be catered for. We consider that hostels are very necessary adjuncts to colleges and schools and the large influx of students in recent times makes the problem very acute. Influx of students and absence of hostel facilities contribute to the migration of the parents of the students particularly of girls. We recommend for the purpose, the development of students' centres in suitable localities with hostel accommodation and other amenities. At least one such centre is required for boys and one for girls in the Madras City which may be assigned for planning, development and construction either to the Corporation or the Improvement Trust. Accommodation for possibly about 8,000 to 10,000 students at least might be required. Similar accommodation should be provided in the case of other large urban areas also like Coimbatore, Madurai and Trichinopoly. Besides students, there are also large number of unattached single men and women who come to the City and large towns for short sojourn on business. For them also hostel arrangements are necessary.

We also suggest that the Government might themselves build students' and public hostels immediately and allot them to their own staffs as a temporary measure until such time as suitable housing is made available to them.

Dormitories for Vagrants and Pavement Dwellers.

164. It would also be helpful from the standpoint of the health and sanitation of the City and larger towns to provide a few dormitories, at convenient spots in the different wards and outside, for persons who are or become homeless due to various circumstances and need some temporary shelter. These should be separate for men and women in different localities. These dormitories may largely cater for night shelter only and that too for a fixed short period at a nominal charge per night or even free in extreme cases. They should not, however, be made into permanent homes for vagrants or footpath dwellers, as thereby slum conditions are bound to arise.

Economic Rent.

165. In the ordinary sphere of economics the rent commanded by a house built for a particular class in the community will primarily be the rent that class has been accustomed to pay, and that sum should be, in the first instance, such, as to give a net income of not less than the current rate of interest on the capital invested on the building after meeting local rates and taxes and setting aside a reasonable sum for repairs and depreciation. This sum may be termed the economic rent of the house. The rate of interest on the capital invested in a dwelling may be reckoned at 3 per cent which is the Government's borrowing rate. Municipal taxes, etc., may be taken at $1\frac{1}{2}$ per cent of the capital cost and the charges for maintenance, ordinary repairs and depreciation at another $1\frac{1}{2}$ per cent. In all 6 per cent gross on the capital cost may be taken as the minimum economic rent of a dwelling. The Government have also fixed 6 per cent of the capital cost as the standard rent of a Government residence.

In the present conditions, a house with the prescribed minimum standards will cost not less than Rs. 5,000 inclusive of the cost of land. Six per cent on this will come to

Rs. 300. The economic rent of a dwelling costing Rs. 5,000 will thus be about Rs. 25 per month. A sum of Rs. 25 may therefore be taken as the economic rent of a dwelling with the prescribed minimum standards.

Proportion of Income payable as House Rent.

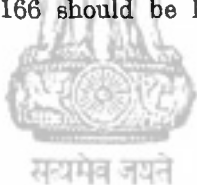
166. We consider that a reasonable proportion of the income which can be applied to payment of rent should be 10 per cent for income groups of Rs. 200 and below, 12½ per cent in the case of income groups above Rs. 200 to Rs. 500 and 15 per cent of the income in the case of income groups above Rs. 500. Based on these considerations we find that only persons drawing above Rs. 200 will be in a position to pay the economic rent for a dwelling with the prescribed minimum standards.

Upper Limit for Low Income Groups.

167. As suggested by the Bhole Committee we recommend that in the present conditions, Rs. 200 should be fixed as the upper limit of the low income groups so far as the Madras Province is concerned. It may not be possible to expect payment of economic rents from persons drawing incomes of Rs. 200 and below. It is only in respect of low income groups that State assistance for house building is most necessary.

Rents Recoverable in Subsidized Housing.

168. It is however considered that rent-free accommodation is demoralizing and makes persons irresponsible. We do not recommend such a concession to any public servant or worker. The maximum rent charged for any building constructed out of public or quasi-public funds should not exceed 10 per cent of the occupiers' earnings, including those of the dependents. But this should in no case be less than the cost of maintenance of the building, services and taxes, even where the value of services and taxes exceeds the 10 per cent limit. The allotment of houses to low income groups should ordinarily be based on the number of inmates in the house and not on the basis of incomes merely. Houses having accommodation in excess of the minimum standard of 340 square feet of floor space may however be allotted with reference to income standards so as to make the scheme financially sound. Subsidized houses for low income groups should be generally allotted to the low income groups and if allotted outside that group, rents up to 15 per cent or more as prescribed in paragraph 166 should be leviable irrespective of the standard rent of the house.



CHAPTER X.

BODIES INITIATING BUILDING WORK.

Classification of Housing Needs.

169. Housing which is one of the primary human needs, ranking in importance next only to food and clothing, is admitted as a public utility. The communities in need of housing may be broadly classified as under :—

I. (i) Well-to-do classes (rich and upper middle classes including professional and trades people such as lawyers, doctors, teachers, shop-keepers, etc.).

(ii) Persons of moderate means among the professional and trades people mentioned above.

II. *Employees*, for example,—

(i) Government servants,

(ii) servants of local boards and municipalities,

(iii) employees in industrial establishments like mills, factories, railways, etc.

III. *Unattached employees*, for example,—

(i) Domestic servants,

(ii) employees under small scale industries, like carpenters, weavers, etc., employees of hardware manufacturers and the like,

(iii) petty employees employed in shops.

IV. *Homeless people*, for example, beggars, coolies, rickshaw pullers, cartmen, unemployed destitutes, etc.

V. *Floating population*.—Students, men and women visiting Madras, other big towns, etc.

Agencies for Providing Housing.

170. The principal agencies that can take up building work are (1) the Government, (2) local authorities (municipalities, panchayat boards, City Improvement Trusts, etc.), (3) employers, (4) public utility bodies such as co-operative societies which exist for no profit or only limited profit, (5) commercial enterprise such as trading houses, banks, insurance companies, etc., and (6) private enterprise, owner-builder, maistri-contractor and building trade. Different agencies will have to undertake house construction to satisfy the needs of the appropriate classes of people.

Housing for the Well-to-do People.

171. In the case of people coming under class I, i.e., well-to-do people, private and commercial agencies can be left to satisfy their housing needs and these classes of people need little or no assistance from the Government. All that the building trade needs in the matter of developing housing is help to secure building land at reasonable prices and supply of building materials such as bricks, coal for bricks, lime, cement and steel at fixed prices.

Housing for Persons of Moderate Means.

172. As regards professional class and trades people or other persons of moderate means who can ultimately pay for their houses, co-operative agency is the best to cater to their housing needs. In respect of the well-to-do among them, building trade can be left to cater to their requirements when they do not join co-operative societies.

In the case of building corporations and societies (not co-operative societies) formed specifically for the purpose of mutual help in building houses without the intention of making any profit, the facilities extended to co-operative societies in the matter of acquiring land, making materials available, etc., should also be extended to them.

We must, however, mention that private companies engaged in building trade with the motive for profit do not need any financial help from the Government.

Housing for Employees : Government Servants.

173. Next come the case of employees. It is now admitted on all hands that every employer should look after the welfare of his employees and should therefore provide them with the shelter that is necessary to ensure their good health and cheer, and to keep them fit for efficient work. *The Government and local bodies as the biggest employers should implement what is preached to others and thus set an example in the matter of housing their employees especially those belonging to the lower income groups.* This can be done in several ways—the Government may directly undertake house construction or give necessary aid to public utility bodies like co-operative societies to undertake this task.

Prior to 1931, the Government used to sanction interest-free loans, and subsequently interest-bearing advances to the extent of 12 months' salary repayable in 48 monthly instalments. Consequent on the grant of loans to co-operative building societies, this system was stopped in 1931. The Government have recently passed orders sanctioning advances to a maximum amount of 15 months' salary, subject to 90 per cent of the surrender value of unencumbered insurance policy on the life of Government servants, repayable in 60 months to cover the cost of purchase of site and initial deposit required for acquisition of house through co-operative societies. They have also permitted withdrawal of General Provident Fund accumulation for purposes of house construction or reconstruction. Although these concessions help to some extent only high placed Government servants, they are of no appreciable benefit to the low paid employees. We are of opinion that advances to low-paid Government servants should be at least to the extent of 2 years' salary, should be repayable in not less than 8 years and should be free of interest, if any progress is to be made in the matter of housing them. The grant of lands at concessional rates would be an additional help.

Cost of Housing for Government Servants belonging to Lower Income Groups.

174. Housing of the low income groups amongst the Government's own employees who cannot avail themselves of these concessions should be a responsibility of the State. Taking the cost of construction of a house for a low-paid Government servant roughly at an average of Rs. 3,000 and the number of such class of Government servants for the Province to whom house rent allowance is paid being about 112,000 the total cost of housing schemes for these classes of people by the Government will come to Rs. 36.15 crores. This may be met by the Government by raising loans. The expenditure which the Government are now incurring in the grant of house rent allowance to their employees can be capitalized and this capital can be used for the construction of quarters for their

servants. While this may cover the cost of construction in part, it is not to be expected that this will meet the whole requirements.

A statement (Appendix XI) is attached showing the distribution of staff by income groups in the City and Province, their average salaries, the rent that can be realized and the rents due. The deficit that will fall on the Government in respect of such housing will be about Rs. 17 crores. The capital to finance the portion which can be repaid out of rents should be raised as loans while the unremunerative part alone should come out of revenues.

Housing of the Employees of Local Authorities.

175. Then come the employees of local authorities and municipalities. The responsibility for providing houses for them may be shared by the Government and municipalities and other local authorities as the case may be; and the Government aid can be extended to the local authorities and municipalities in the form of loans and subsidies. We consider that in respect of local bodies' housing their employees drawing below Rs. 200, the difference in the cost of construction between the rates prevalent in 1939 and the current rates should be a charge on public revenues, due regard being had to the high cost of construction, particularly now, on account of the conditions created by the war. In order to fix the obligation of the Government definitely, we consider that the Provincial Government should subsidize 25 per cent of the cost of housing these employees and secure 25 per cent subsidy from the Central revenues in pursuance of the policy adumbrated in letter No. Fac. 32 (i), dated 18th February 1946 and No. Fac. 32 (1) of 1st November 1946, from the Department of Labour of the Government of India. The Government should also give loans to the local authorities to the extent that may be required by them for launching the housing schemes. The loans may be interest-free repayable in a period not exceeding 40 years.

Subsidies and loans, same as those recommended for municipalities and local bodies should be extended to City Improvement Trust in so far as they relate to slum clearance, rehousing and housing the displaced.

Housing for Employees of Industrial Establishments, Big Employers, etc.

176. In the case of workers of industrial establishments, we have already observed that big employers like the mills and other industrial establishments, railways, etc., should provide quarters for their workers in their own interest as well as those of the employees. It should be incumbent on the management of factories with a capital in excess of rupees one lakh to provide suitable housing as prescribed for the class of labour employed by the factory concerned.

Advantages and Disadvantages in Employers' Provision of Housing.

177. There are obvious advantages as well as limitations in making the employer responsible for providing the housing accommodation for his workers. The main advantage lies in regard to the saving of time by locating housing as near the place of work as possible, designing it to fit them with the peculiar needs of the concerned operatives and serving or equipping such accommodation with the ordinary amenities and services as may be prescribed. On the other hand, if housing is provided compulsorily as a legal obligation thrown upon the employer, the latter would demand that, so long as a worker works in his employ, he must occupy the housing provided for by the employer. The freedom of movement will be affected. The moment the worker ceases to be in the employ of the party providing the accommodation the latter would be free to eject such a worker whether or not he has found any alternative accommodation. The worker thus gets tied up to a place and, as such, he may develop a tendency to dislike living in quarters provided by employers.

Subsidy for Housing Industrial Workers.

178. But no industry can, by itself, shoulder the entire financial obligation concerned in such a scheme. We are aware that the Government of India have offered a subsidy of 12½ per cent subject to a maximum of Rs. 200 per house and certain other conditions which include that the Provincial Government should make a like subsidy for housing of workers of industrial establishments. We are of opinion that the limit of subsidy of Rs. 200 prescribed by the Government of India would be unworkable in practice, as the minimum cost of the cheapest house is of the order of Rs. 3,000 per unit.

The Government of Bombay have approached the Government of India to raise the subsidy to 33½ per cent; themselves undertaking to meet another 33½ per cent from their

own resources, and the balance is proposed to be met by a levy from the employers. The levy is in the shape of Rs. 2 per month per employee of any establishment which accedes to the scheme and a further levy of Re. 1 per mensem on allotment of quarters to a worker in that establishment. This has been more fully explained in paragraph 109 of Chapter VII. We consider that the distribution of the cost is in fair proportion and that the scheme may help substantially to reduce the present housing shortage among the workers of industrial concerns. As the Government contribution will be over 50 per cent the cost of such housing, the control and ownership of such houses may vest in the Government.

In the alternative, we suggest that the Provincial and Central Governments pay 50 per cent of the cost of housing, as a subsidy, the industrial establishments concerned to pay the balance of 50 per cent and keep the management of such housing in their own hands, subject only to the condition that, in the event of any block of houses remaining vacant, the Government will have the right to take them over and allot them to other employees in need of houses and that the Government always hold the residuary right over the houses. The establishment may be helped in promoting the scheme by the grant of loans to meet its 50 per cent share at a rate of interest not exceeding 3 per cent repayable in 20 years in equated annual instalments.

It seems to us necessary to arrive at a uniform policy applicable to all Provinces alike in the matter of allocating liability for housing industrial labour so as not to handicap industries in one province as against another. The liabilities of the industry, the Provincial Government and the Central Government should be fixed, accepted and enforced on all parties alike.

Where the Government have contributed substantially to industrial housing schemes, the Government may take power to create an organization to exercise full authority over the control of such housing. The ownership, operation and distribution of housing should also vest in such an organization.

Where the workers of any such industrial establishments constitute themselves into a co-operative society and undertake a house building scheme for themselves, the same concessions, which we have recommended above, should be extended to these workers also, subject, if necessary, to an understanding with the employer that the monthly instalment of repayment may in law be recovered from the workers at the disbursement of their pay, the workers being given such house rent allowance as may be admissible. The formation of such housing societies for workers should be encouraged, as it will stimulate thrift and result in home ownership conducive to economic and social security.

Housing for Unattached Employees.

179. For people coming under class III, i.e., workers not attached to any organized industry or large establishments such as domestic servants, petty employees in shops, etc., it is not possible for the employers to provide housing. In all these cases the local authority should provide the housing aided by the State in the same manner as for industrial workers.

In all cases of housing schemes for the low income groups and persons of limited means other than those outlined above, the Government should come forward and do every thing possible to relieve the present housing shortage.

Housing for Homeless Wage-Earners and Destitutes.

180. We have already stated that it is the duty of local authorities and municipalities to provide beggar homes and dormitories for pavement dwellers, suitable beggar laws and revenue measures being provided by the Government.

Housing for Floating Population.

181. As regards students and other floating population, we have already made a recommendation in respect of the City. The same will apply to the other municipalities and local bodies.

We further suggest that the Madras City Improvement Trust may be requested to work out a scheme for the accommodation of the floating population on a remunerative basis. Accommodation may consist of single units, family units and, if necessary, circuit houses for distinguished visitors. We consider that a suitable place for the development of such a scheme in the City would be the Body Guard lines area adjoining the Mount Road. In the case of other urban areas, municipal and other local authorities should act likewise in the matter.

CHAPTER XI.**CO-OPERATIVE HOUSING.****Co-operative Housing Society, a Most Important Public Utility Institution.**

182. The problem of providing suitable housing accommodation to the people is not merely confined to industrial centres; nor is it a problem merely affecting urban workers, the poor, and the lower middle classes, but, is much wider, embracing every part of the province, urban, semi-urban and rural. In dealing with the housing problem, private enterprise suffers from a disadvantage which a public body does not, namely, its inability to obtain necessary capital at a low rate of interest. A public body on the other hand cannot bestow the interest and attention which an individual can on his construction. A co-operative organization which is a democratic body may claim both the characteristics, viz., individual interest and ability to raise funds at low rates. It serves its members and does not seek profit. It is subject to registration as a corporate body and its regulations are subject to approval by the Registrar of Co-operative Societies. As a public utility institution it is eligible for special concessions from the Government in the matter of finance and exemption from taxation such as registration fees and stamp duties.

Special Credit Facilities for Co-operative Housing for Government Servants.

183. As already observed in Chapter X, the Government have recently ordered that Government servants shall be granted advances on the security of their insurance policies to the extent of 90 per cent of the surrender value of the policies with interest at 3 per cent subject to the maximum amount of 15 months pay of the Government servant concerned, for meeting the payment towards site value and initial deposit required for acquiring a house through a co-operative house construction society or the share capital and site value required for constructing a house through a co-operative house building society repayable in 60 monthly instalments. The Government have also permitted the withdrawal of the amount standing in the General Provident Fund to the credit of a Government servant for the purpose of construction or reconstruction including payments to co-operative house construction or house building societies.

Salient Features of Co-operative Building Society.

184. A member of the public is enabled to secure a house on payment of the cost of site and a fraction of the capital cost of construction of the house and to pay the balance in equated payments over a long term of years out of what he would have had to pay as rent on a leased house. He is not subject to being thrown out of the tenancy and has all the benefits of ownership as long as he pays the instalment regularly. On account of its various advantages, co-operative house building has proved very effective in the solution of the housing problem in other countries and this Province has begun to take advantage of such experience.

Types of Housing Societies.

185. Co-operative housing societies are generally of two types: (1) Individual ownership system and (2) co-partnership system.

Individual Ownership System.

186. This type of society lends money to its members in order that they may build houses. It is really a credit society but is distinguished from other credit societies by the objects for which it lends, the period of the loan and the security it demands.

Co-partnership System.

187. Co-partnership system has been developed on two lines. One type of society enables its members to become the owners of their houses by means of a system of hire-purchase and the other retains possession of the buildings erected and merely rents its dwellings to members ensuring continuity of tenancy.

Co-partnership Tenancy.

188. The co-partnership tenancy system has been tried in other parts of India; but it is not popular in this province. Under this system houses are built in the form of flats for tenants. According to the plan on which this type of societies is formed in Bombay, the member contributes in the first instance by shares and then pays rent so calculated to cover not only the economic rent of his house but also an amortization or sinking fund payment which at the end of a certain number of years liquidates the whole value of the building. At the end of the period he is entitled to the right of occupation of the building as a tenant of the society of which he himself is a member continuing to pay only a nominal rent to meet the maintenance and repair charges. The society collectively owns the property and the tenant members have only the interest of shares in the society. This is a type of society which fully calls forth unselfishness, brotherhood and co-operative idealism, and deserves to be tried. The one advantage of the system is that in flats it is possible in fact to own one flat or part of a flat and one does not have to find the capital for the cost of a whole building.

Co-partner Ownership.

189. This is a modified type of society in which separate houses are built to suit the tastes and requirements of individual tenant members. The member holds his house from the society as a lease-holder. The lease contains strict conditions against sub-letting, transfer or other forms of profiteering or parting with the property without the written consent of the society. The lease-holder may pay the full value of the house on occupation or he may pay by instalments as the co-partnership tenant does. After a member has paid the full value of the house he owns the house, but continues to pay a nominal fee for the upkeep of the building. The only advantage of this is that the owner is relieved of the necessity of the upkeep of the house and it is done by a joint agency; and the colony is a closed colony where only approved members may have tenancy.

Individual Ownership *versus* Co-partnership.

190. Co-partnership system has never been popular in this presidency. The following advantages are absent in this type of society: (1) individual ownership, (2) an independent house, (3) the satisfaction of building one's own house according to one's own personal interest and (4) the personal interest in, and supervision over, the actual construction and maintenance.

For these reasons the existing building societies in this province are formed on the individual ownership system. Under this type, the society ordinarily obtains funds from shares, loans from Government and deposits from members. The society is not allowed to borrow from any one except from the Government. These funds are utilized in giving loans to members for the specific purpose of building houses and are given on the security of site or sites belonging to the borrower together with the proposed building and appurtenances thereon. The construction of houses is ordinarily undertaken by the members themselves.

Progress of Building Societies in the Province.

191. Though the first co-operative building society in the province was organized at Coimbatore as early as 1913-14 and other building societies were formed at Madura, Dindigul, Kumbakonam, Madras, etc., in succeeding years, the real progress in the activities of co-operative building societies began only from 1924 onwards, when the Government accepted the proposal to finance building societies direct at cheap rates of interest in order to relieve congestion in urban areas, framed rules for the grant of state loans and placed annual allotments at the disposal of the Registrar for sanctioning loans to these societies. Till recently, the only two interesting developments were the successive reductions in the rates of interest charged on State loans from $6\frac{1}{2}$ to $3\frac{1}{2}$ per cent and the efforts made from 1938 to start schemes for housing industrial workers. At the end of the co-operative year 1938-39, there were 126 co-operative building societies with 4,583 members on their rolls and a paid-up share capital of Rs. 10.53 lakhs. Since 1924 as many as 2,315 houses valued at Rs. 78.18 lakhs were completed with the aid of state loans and 169 houses were under construction. A sum of Rs. 20.36 lakhs was due by these societies to the Government. During the years of the war, state loans to societies were curtailed and owing to the non-availability of essential building materials, the work of these societies practically came to a stand-still except for the recovery of instalments. After the end of the war, housing

activities have been revived and the following statement will show the position of co-operative building societies as on 30th June 1947 :—

1. Number of co-operative housing societies as on 30th June 1947—				RS.
(a) Building Societies	128	}	130	
(b) Co-operative Townships	1			
(c) House Construction Society	1			
2. Number of members on rolls				7,458
				RS.
				IN LAKHS.
3. Paid-up share capital				22.12
4. Reserve Fund invested (as on 30th June 1946. Figures as on 30th June 1947 not available)				2.23
5. Government loans outstanding against the societies				4.43
6. Loans outstanding against the borrowers—				
(a) Society loans (as on 30th June 1946. Figures as on 30th June 1947 not available)				7.93
(b) Government loans (as on 30 June 1947)				4.43
7. Total amount of loans sanctioned to building societies from 1921 up to date				64.97
8. Total number of houses constructed by members from 1924 up to date				NOS. 2,560
				RS.
				IN LAKHS.
9. The estimated value of houses (as for 2,530 houses as on 30th June 1946. Latest figures for 30th June 1947 not available)				86.93

These societies were primarily intended to benefit the poor and the middle classes. Though these societies are in existence for over twenty years their benefits have not been very widely availed of. Only about 2,560 persons have so far availed themselves of the facilities offered by these societies. The Committee on Co-operation (1940) observed that about 25 per cent of the borrowers belonging to income group below Rs. 50 and Rs. 16 per cent of those in income group between Rs. 50 and Rs. 100 had to sell, transfer or mortgage their houses to others. The reasons for the poor progress are: firstly the terms offered by the society are not attractive. It requires an initial capital to be deposited in the society (either in cash or in the shape of house-sites or both) to the extent of 20 to 25 per cent of the total cost of the house proposed to be constructed. The rate of interest charged by the society though it is only 4 to 4½ per cent is considered high for the purpose of construction. The extent of the loan which is fixed at five times the paid-up share capital subject to a maximum of Rs. 10,000 is not found adequate. We understand that this has been recently raised to Rs. 15,000. Secondly, the materials required for construction of houses are scarce. An individual who is anxious to construct a house does not possess the requisite technical knowledge and he has to go to a building contractor who demands a decent margin of profit which is not within the means of a middle class person to pay.

Recent Lines of Development.

192. Recently two new lines of development have taken place, the Co-operative Township and the Co-operative House Construction Society. The Co-operative Township aims at providing not only loans for the construction of houses but also other civic amenities for the members such as water-supply, lighting, sanitation, health services, recreational facilities, etc., which are usually provided by civic bodies like municipalities, etc. Such a Co-operative Township has been recently registered at Katpadi in the North Arcot district. It proposes to acquire about 1,400 acres of land and divide it into about 5,000 plots after setting apart the required area for common purposes like roads, parks, schools, etc. These plots will be divided into five classes and sold to members at prices ranging from Rs. 400 to Rs. 6,000 each. The cost of acquisition of lands is estimated at Rs. 9 lakhs and this money will be found entirely from the share capital of members. State loan will be advanced only for the construction of houses. It is estimated that the execution of the scheme will cost about Rs. 3 crores.

Co-operative House Construction Society.

193. The Co-operative House Construction Society is based on the co-partnership system. The society acquires sites, constructs houses and lets them out to its members on the hire purchase system under which a member becomes the ultimate owner of the house provided he regularly pays a specified amount as rent for a stipulated period, usually twenty years. Such house construction societies have been formed at Madras, Tanjore, Trichinopoly, Madura, Ellore and Palamcottah.

The main features of this type of society are indicated below: The society will purchase large plots of land with the share capital contributed by its members. The society will construct or cause to be constructed with the aid of loans provided by the Government three classes of buildings as shown below:—

(a) A class buildings on about 6 grounds or 30 cents of land costing about Rupees 15,000 each exclusive of the cost of land;

(b) B class buildings on about 4 grounds or 20 cents of land costing about Rs. 10,000; and

(c) C class buildings on about 2 grounds or 10 cents of land costing about Rs. 5,000.

The sites when acquired and laid out will be classified as A, B and C and members will be allowed to make selection of sites. No member will be allotted more than one site. The society is to arrange construction of houses with the help of qualified contractors or otherwise according to type designs prepared by a qualified architect.

When the houses are completed and are ready for occupation, they will be valued and the value of each house will be entered in the books of the society against the member concerned. Before the member occupies the house he should make an initial deposit to the extent of one-fifth of the total cost of the house he desires to occupy. The balance of the hire-purchase money is repayable in 20 years in monthly instalments. The amount may, however, be paid in fewer instalments or even in one lump sum, but the house will continue to remain the property of the society for a minimum period of ten years from the date of the member's occupation during which period he will have to pay a nominal rent to cover the maintenance charges. This will of course be an addition to the instalment for the repayment of the loan and interest thereon. After ten years have elapsed and the amount due to the society under the hire-purchase system is fully paid, the society adjusts his share capital towards the value of the site and executes a sale deed in his favour conveying the site and the building thereon.

Salient Features of the Co-operative House Construction Society.

194. The salient features of this society are: (1) It arranges the construction of the building on behalf of the member and he is thus relieved of much of the trouble in the procurement of building materials or of the supervision of the construction; and (2) it permits renting of a member's house with the approval of the society.

Progress of the Madras Co-operative House Construction Society.

195. The Madras Society has already acquired an extensive site of about 131 acres in Adyar at a cost of 16 lakhs of rupees and a lay-out also has been prepared for the site. The society has also prepared a set of designs in respect of each class of buildings.

Formation of Housing Societies in Urban Areas.

196. As already observed, societies of this type are also formed in other urban areas besides Madras wherever there are possibilities. To facilitate registration of these societies, the Government in G.O. Ms. No. 2325, Development, dated 26th May 1947, have instructed the Collectors to constitute housing committee in each municipality and major panchayat area where the scarcity of houses is acute to select sites for housing schemes. Such committees have been formed in all districts except the Nilgiris, where there will be one committee for the whole district. The committees have been asked to make a joint inspection of all available sites in the area of its jurisdiction and submit a report to the Government within a period of two months. In pursuance of the Government Order, committees have been set up in 67 municipal towns and in 189 major panchayat areas. Reports on 125 centres have been forwarded by the Government to the Registrar and steps are being taken to organize Co-operative Housing Societies in places where there are reasonable chances for their success. A statement showing the names of the places, the extents of the sites selected for housing, their values, etc., is given in Appendix XIII.

Co-operative Rural Housing.

197. An attempt at solving rural housing problem has been made in Yemmiganur in the Bellary district. Taking advantage of the exceptionally strong financial position of the Yemmiganur Weavers' Co-operative Society which is the biggest of its kind in the Province, the society has proposed to improve the housing conditions of its members. It has acquired 53.98 acres of land in the outskirts of the village at a cost of Rs. 38,654 and the society proposes to construct immediately about 100 houses on this

site. Provision is also made in the scheme for common buildings like a handloom factory, a dye house, a guest house, an office room for the society, a library and reading room, etc. Each dwelling house will be surrounded by a little kitchen-garden. The Government have sanctioned a loan of rupees one lakh for this scheme and the balance of the money required will be provided by the society from its reserves. This enterprise has led the way to similar enterprises by other weavers' co-operative societies in the prohibition districts. Housing schemes for twenty-three such societies are in the various stages of investigation.

Industrial Workers Co-operative Colony at Harveypatti.

198. The Harveypatti Workers' Co-operative colony presents an outstanding example in the field of housing schemes for industrial workers. This scheme is the result of the initiative and enterprise of the management of the Harvey Mills, Madura. With a view to provide dwellings for their workers, the Mills acquired at Harveypatti 67.97 acres of land and constructed houses. A co-operative society consisting of the workers who desired to purchase the houses was formed. Its Board of Directors consists of the District Collector, the President of the District Board, a workers' representative, the President of the Labour Union and a representative of the Mills as President. The cost of each house and the site on which it is built has been fixed at Rs. 600 for a member. The Mills have provided at their expense necessary amenities such as water-supply, drainage, flush-out latrines, compound wall, electric supply, wells, special railway platform, school, dispensary, stores and markets. Each member is required to pay the value of the house at Rs. 4 per month for a period of 12½ years. After full payment, the member becomes complete owner of the house except for the condition that no alienation can be made without the consent of the society. If the tenant, after full payment is made wishes to sell the site and the house, the offer of sale should first be made to the society at the prevailing market rate as may be agreed upon.

Advantages of Co-operative Housing for Workers.

199. Few attempts have been made to use co-operative building societies as a means to provide housing for the workers. Co-operative housing schemes for the workers in this Province by the concerned industries may follow the lines initiated by the Harvey Mills indicated above. An approach to the question along co-operative lines would not only provide hygienic houses and remove congestion in industrial centres but foster thrift and self-help among the workers. In the words of the Committee on Co-operation (1940), this is an enterprise which deserves all the encouragement and support which the Government, the Co-operative department, the local bodies and the employers can give by forming co-operative housing societies and permitting them to build in areas laid out and prepared for housing schemes. Employers of industrial labour may also assist their workers to build their own houses by making free grants of land and supplying building materials free of cost or at nominal rates or by advancing money at a reduced rate of interest. But best results are likely to be secured by the joint action of the workers and their employers in the promotion of housing schemes. It has to be remembered, however, that the average cost of a house providing the minimum accommodation suggested in a previous chapter is about Rs. 3,000 and the adoption of the Harveypatti Scheme will require a monthly contribution by the worker of Rs. 20.

Co-operation in Town-planning.

200. Opinion on the utility of co-operative societies in the development of housing schemes is almost unanimous in every country. But local authorities coupled with public effort must display sustained interest in forming co-operative housing societies for the purpose of providing cheap houses suited to different income groups in each place if the present crisis of house famine is to be alleviated. For achieving this object, local bodies must provide facilities to the societies in the preparation of lay-out, construction of roads and provision of such essential amenities as water-supply, drainage, sewage and lighting. Wherever the Government, municipalities, improvement trust and similar bodies have at their disposal lands to sell or lease for long terms for construction of houses, they should be given preferably to co-operative housing societies at reasonable rates, without auction. A warning should however be uttered. There is usually a tendency in urban areas to confine planning to housing that is suitable for the upper middle class. It should not be so restricted. We recommend that whenever town-planning schemes are undertaken, certain areas should be reserved for people belonging to the poorer and the lower middle classes.

Additional Concessions Recommended.

201. Government have initiated a policy of granting State loans for the working of the co-operative building societies, but as seen from the progress made in this Province, the movement is but little developed as only 2,560 houses have been built in twenty years. To accelerate co-operative building activities, we make the following recommendations in addition to those already indicated :—

(1) *Enhancement of individual credit limit.*—In the case of house building societies, loans to members may be permitted up to eight times the share capital and the maximum loan permissible to any individual member may be fixed at Rs. 20,000; but this limit should not preclude a member from asking for a more expensive house so long as he pays to the society all the moneys in excess of this amount in advance as demanded, and the entire building is held as security by the society.

(2) *Reduction in the rate of interest.*—The Government should be able to grant loans to co-operative societies and even to corporate house-building schemes, which are not profit-seeking, at rates not more than their borrowing rates *plus* a small charge of one-fourth per cent to cover their expenses. The loan should be spread over a long term of years as long as sixty years as in the case of the United States Federal Housing Authority Loans.

Provincial Housing Society Not Necessary.

202. The All-India Co-operative Planning Committee has recommended that a central co-operative housing society may be formed in each province and that its function should be to grant long-term loans to housing societies mainly for the purchase of house-sites and for the construction of houses and to purchase building materials on a large scale from wholesalers and supply them at reasonable rates to the housing societies. If State loans to building societies are to pass through the central society, it will increase the rate of interest to the ultimate borrower, as it will have to add some margin for its services. It may not also be in a position to float loans on its own account and pass them on to members at a rate at which State loans are now available to the building societies. If it should take up the procurement and distribution of building materials, it cannot be of help in these days of controlled distribution and may merely prove a fifth wheel to the coach. For these reasons, we are not in favour of a Provincial Housing Society for Madras.

CHAPTER XII.**RURAL HOUSING.****Introduction.**

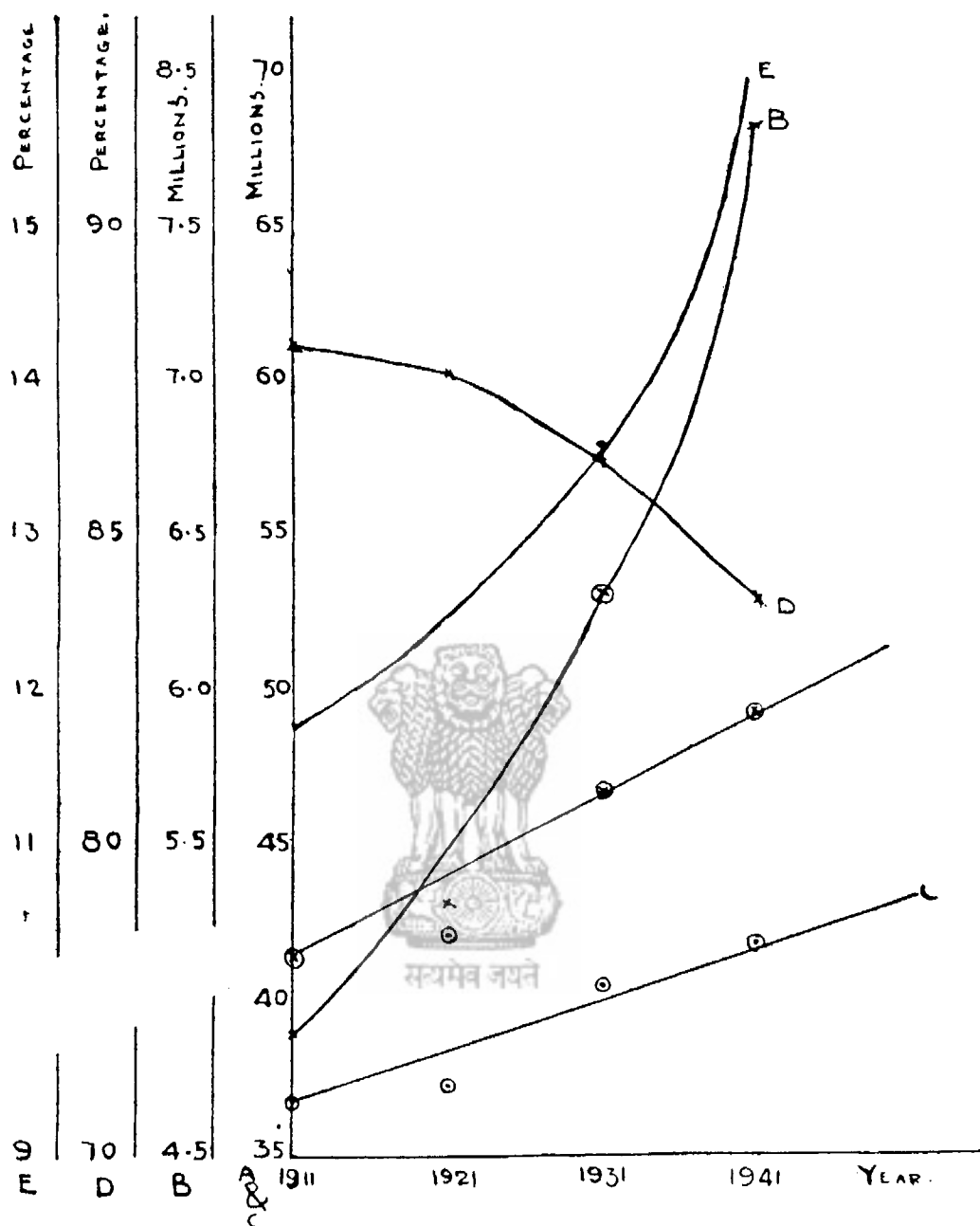
203. The problem of rural housing is not as serious from the quantitative standpoint as from the qualitative point of view. Bad and defective dwellings are more common in villages than in towns though housing shortage is much less acute in rural than in urban areas. The unsatisfactory conditions in rural parts have so far received little attention. To have a picture of the living conditions obtaining in the rural parts, it is essential that special surveys must be made. As this subject is outside the scope of our enquiry, we have not instituted an enquiry into this matter and the committee has been unable to examine the matter in full and at site. A long and detailed tour was projected; it had to be given up for various reasons, mainly financial. We have however incorporated this subject in our report so as to make our survey as complete as possible since the housing problem in rural parts is of equal importance to that of housing in urban and semi-urban areas, for the reason that adequate and healthy housing affords the largest scope for raising the standard of life, health and happiness indirectly arresting exodus into urban areas.

Population Drift from Village to Town.

204. There are 35,480 villages in the Province ranging from small aggregations of a few huts to units bordering in size and mode of life to small towns. The total population of the Province and its distribution between urban and rural areas with percentage of increase from 1911 to 1941 according to Census Reports are furnished hereunder :—

Year.	Total popula- tion in millions.	Urban population in millions.	Rural population in millions.	Percentage of rural to total population.	Percentage of urban to total population.
(1)	(2)	(3)	(4)	(5)	(6)
1911	41.41	4.90	36.51	88.17	11.83
1921	42.32	5.28	37.04	87.52	12.48
1931	46.74	6.34	40.40	86.43	13.57
1941	49.34	7.87	41.47	84.05	15.95

A graph is attached to assist comparative study.



A = Total Population.
B = Urban Population.
C = Rural Population.

D = Percentage of Rural to Total Population.
E = Percentage of Urban to Total Population.

The above figures show that the total population has been increasing in the thirty years preceding the last census year. Likewise, the proportion of the urban to the total population marks a gradual increase during the last four census years. On the other hand, the proportion of rural to the total population records a decrease in all the four census years from 88.2 per cent in 1911 to 84 per cent in 1941. It is therefore evident that, even before the war, there had been exodus of the rural population to towns though the tendency has intensified in 1941 and after. This progressive drift of the population to urban areas is due to advance in industrialization, better amenities available in urban areas, more favourable conditions of employment, improved standards of living, the concentration of education and medical facilities in urban areas, greater attractions of city life, greater security, breaking down of joint family, freedom from social inhibitions and freer life all round.

Measures to Arrest the Drift.

205. A further very important cause for the rural de-population is due to the ' Land Question ' which means the agricultural labourer has no ' stake in the soil ', no profitable interest in the land and is consequently at the mercy of the land-owner. Whether it will be possible altogether to check this migration of labour population from rural parts to urban areas or not, we feel that it is necessary to make village life more attractive. One such measure is to provide good housing together with services and amenities so that village life might be less dull and monotonous and the disparities which persist to-day between rural and urban life are diminished.

Low Wage Level of Rural Workers.

206. One important cause contributing to unsatisfactory rural housing is the usual want of resources. With the poor income of the agriculturist in general, there is little margin for him to make an adequate outlay on proper housing and we do not believe that the housing problem would ever be satisfactorily solved without due recognition of the relations between low income and housing. The problem of low income is inseparably bound up with the problem of rural housing and aided housing stands out as the only solution.

Health and Sanitation.

207. The villages in the Province lack adequate health and sanitary services. The results of these are noticeable on the heavy mortality rates. An extract reproduced below from the Monograph on Rural Problems in Madras by Mr. S. Y. Krishnaswamy, I.C.S., supports this view with statistical data.

" Next to the appalling poverty of the masses, the most noticeable feature about South Indian village life, is the low standard of health maintained by the population. This state of affairs is the result of various causes, but most of them may, in the last analysis, be traced to the economically backward condition of the people. The following tables show the comparative position of United States of America, United Kingdom and India in the matter of *per capita* income on the one hand and births, deaths and expectation of life on the other.

Per Capita Income.

					RS.
United States of America	1,406
United Kingdom	980
India	65

Vital Statistics.

	Birth rate per mille.	Death rate per mille.			Mean expectation of life.
		Infantile.	Maternal.	General.	
(1)	(2)	(3)	(4)	(5)	(6)
United States of America ..	17.0	54	8.5	11.2	62
United Kingdom	14.9	58	4.0	12.4	63
India	48.0	162	24.5	33.0	27

The position relating to India as reflected in the figures given above is more or less true of the Madras Province. While the low rate of *per capita* income is at the back of this sorrowful state of affairs, the more immediate causes which contribute to the low health level of the population are mainly (1) unsatisfactory dwelling houses, (2) lack of proper water-supply in rural areas in particular, and (3) inadequate sanitary arrangements and disregard of environmental hygiene, (4) paucity of medical and maternity aid especially in rural areas and (5) general lack of education."

The level of health services is unsatisfactory even in urban areas and the position is much worse in rural parts. The spaces between the houses are narrow and full of depressions which allow water to stagnate and offer a suitable breeding ground to the bacilli of innumerable diseases. All these make their contribution towards the regular visitations of malaria after the rains, and cholera and plague during the winters. Sanitary reform, village planning and housing schemes are practically unknown in the rural parts of the country. While such medical and maternity relief as has been provided is confined exclusively to taluk headquarters and is entirely absent in the villages.

Housing Position.

208. The following table shows the number of occupied houses and the population in the urban and rural areas in the Province :—

Census years.	Number of occupied houses.		Population.		Number of persons per house.	
	Villages.	Towns.	Rural.	Urban.	Villages.	Towns.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1881 ..	5,192,582	518,949	28,143,573	3,027,058	5.42	5.83
1891 ..	6,798,008	640,948	35,749,832	3,681,230	5.26	5.59
1901 ..	6,484,794	739,314	34,327,541	4,295,525	5.31	5.81
1911 ..	7,005,429	861,061	36,950,684	4,919,476	5.27	5.71
1921 ..	7,454,515	961,750	37,489,349	5,304,806	5.03	5.52
1931 ..	8,189,346	1,152,443	40,778,955	6,416,637	4.98	5.57
1941 ..	8,255,725	1,483,291	41,879,082	7,961,482	5.07	5.37

The above figures do not indicate any real overcrowding. On an average there are five persons per house and this figure has remained more or less constant for several decades. From a quantitative standpoint it cannot be said that the houses are too few for the rural population as revealed by the above census figures, nor any worse now than they were 60 years ago. Though the space aspect of housing is not so urgent as in the cities, yet the problem of proper housing is not a mere question of so much space per head or family. It also presents the problems of suitable roofing, flooring and distribution of the available space as between the different needs of a family. The man and the kitchen, the man and the grain, and equally frequently the man and the cattle are found sharing together the same room throughout the night. These are precisely the aspects in which our rural houses are most defective.

Housing Conditions.

209. Many of the existing houses in most villages of the country are flimsy, ill-ventilated, insanitary and unhygienic. The following extract from the same Monograph presents graphically and truly the housing conditions prevailing in rural parts :—

"Houses in rural areas fall into two broad classes, viz., (1) labourers' houses and (2) ryots' houses. The former is usually built of mud and has a roof of palmyrah thatch. In front there is a verandah or pial, also of mud, and the interior consists of a single room. In many cases even the pial is absent. The dwelling of the average ryot is also usually built of mud but the roof is thatched with bamboo and straw or is sometimes tiled. The pial is raised higher above the ground and the interior consists of four or five rooms opening on to a verandah which surrounds a small courtyard. One of the rooms is used as a kitchen, one as a store-room for grain and other property and the rest as sleeping apartments. The cattle are sometimes—perhaps often—tethered in the courtyard at night; though usually they are lodged under a sloping roof outside the walls of the house. The houses of even the richer villagers are much the same in form, though the rooms may be somewhat larger and more numerous while the courtyard may contain a well or sometimes a cesspool in close proximity. Houses of more than one storey are seldom found in villages, and are not numerous even in towns. As a rule, the houses are ill-lighted and ill-ventilated and window openings are either too few and narrow or totally absent. What is reckoned as a house for census purposes is not a house in the sense that it provides the accommodation floor space or living room reasonably required for its inmates. Though on an average, the census figures indicate that there is one house for about five individuals the living room available in the house is totally inadequate for even a much smaller number and when conditions other than space are considered, perhaps 90 per cent of the rural houses will be condemned without hesitation, as unfit for human habitation. The flooring is damp, the walls are deeply indented, light and air practically absent, roofing low and flimsy and in short all the conditions exist which make for sickness and disease. And when it is remembered that the size of the family usually increases as one goes down the social scale, it will be seen that the poor man with a large family inhabits the smallest hut and to the other evils mentioned above, the evil of overcrowding is also added."

Rural housing is indeed a serious problem and the standard of housing has definitely been found to be lower in villages than in urban areas and even small improvements to the existing houses will be greatly welcome.

Causes for the Unsatisfactory State of Rural Dwellings.

210. The unsatisfactory state of rural dwellings are due to several causes. Most of the houses are fairly old. Moreover, new dwellings are not required to conform to any regulations. In many cases dwellings are too scattered to enable common services such as water-supply, drains, electric light, etc., to be provided on an economic basis.

The present state of rural housing appears to be mainly due to the low income level, as already stated, of a large proportion of the rural population which leaves little or no margin for improving the housing conditions.

Survey of a Typical Village in the Tanjore District.

211. Here are the statistics which relate to one village in the Tanjore district—

Total population	1,242
Number of houses	260
Number of tiled houses	3
Population by age over 12 years	980
„ 2 to 12 „	218
„ Under 2 „	44
Total	1,242
Density per house	4.78
Total lands held on patta—					
					ACS.
Dry	967.16
Wet	248.27
Total	1,215.43
Number of families	260
Average holding per family	4.675 acres.
Pattadars over 10 acres	3
With over 5 acres but less than 10 acres	6
With over 3 acres but less than 5	15
With less than 3 acres each	111
Total	135
Landless families	125

It will be seen that for nearly 50 per cent of the families, land has to be found for building houses on, besides financing the house-building itself and they have no resources except the wages to build them from.

Comprehensive Survey Essential.

212. The first essential thing for a study of the problem is to institute a comprehensive survey of the rural housing conditions. Having regard to the fact that over 80 per cent of the population live in rural areas and that the housing conditions in those areas constitute a menace to the general health of the people such a survey is highly desirable and necessary. This survey will furnish the data necessary to determine: (1) how many or what percentage of houses are in a fit condition, (2) how many require remodelling and how many must be demolished altogether and rebuilt. A comprehensive view of the magnitude and nature of the problem may then be available.

Measures to Improve Rural Housing.

213. For improving housing conditions for low income groups and for improvement of slums in the city and urban areas we have suggested some measures which may be applied to rural areas also. Minimum housing standards must be laid down and they should be enforced. Type designs for new houses should be made available to the villagers. Mass production of standard fittings for all houses and for their sale if necessary on an instalment basis at controlled rates is desirable. In this connection it is seen from the report of the All-India Co-operative Planning Committee that the Public Works Department in the Punjab have been making experiments with various types of local materials which could be used in the building of rural houses and have prepared estimates of cost on the basis of current prices. It is stated that they have evolved a new material, namely compressed mud which is as strong as ordinary brick and can be manufactured cheaply. This is an old system with a new name. It used to be called *Pise* work where semi-dry plastic clay and gravel used to be rammed between forms. The materials are now subjected to soil analysis and are compounded to produce the maximum possible strength for the class of material available in the locality. Such materials would cost less and could be used for effecting improvements to the existing houses and similar researches may be undertaken in this Province with a view to bring down building costs. As a first step, basements of brick in mortar and cement flooring would be useful. Masonry

walls may be added later as the finances improve. This will cut down initial expenditure to about 30 per cent of the cost of the whole house and make the scheme financially more feasible. Enormous quantities of standard fittings specially iron fittings would be required for rural housing. Their supply is woefully short. We have suggested in Chapter VIII that they may be manufactured locally with aid from the Government in the shape of capital and supply of raw materials required for the industry. When such an industry is established it will be able to supply the standard fittings required for rural housing as well. The problem of rural housing should be looked upon not only from the point of view of providing houses to the rural populations but also of providing non-seasonal employment.

Revival of Land Improvement and Agriculturists' Loan (General) Rules to Facilitate Housing Schemes.

214. We are aware that in March 1937, the Government amended the Madras Land Improvement and Agriculturists' Loans (General) Rules, 1933 providing for the grant of loans to the ryots from Rs. 500 up to a maximum of Rs. 2,000 for the construction of new dwelling houses in rural areas on the security of the site and the building constructed thereon with the aid of the Government loans. We understand that as the scheme was not popular at that time it was dropped altogether in October 1939, on the suggestion of the Board of Revenue. We suggest that the matter may be re-examined in greater detail in order to ascertain whether with any modifications, the scheme may not be made popular particularly by reducing the rates of interest to quarter per cent over the borrowing rates and by spreading the period of repayment over a longer term of years, and also by speedy disposal of loan applications.

Co-operative Housing Schemes for Villages.

215 The All-India Co-operative Planning Committee has recommended that a Co-operative Housing Society may be organized for a group of villages, that after construction, houses may be taken over by the Society, which will be responsible for the collection of rent from the occupier members and that option may be given to them to purchase the houses at a value to be determined with reference to the local market rates and that payments may be made under the hire-purchase system over a period of 20 to 30 years. We recommend that the feasibility of forming such societies may be taken up for investigation by the Co-operative Department for adoption in this Province.

Housing for Agricultural Workers.

216. We are of opinion that people who do not own one or two cawnies of land in a village cannot afford to have more than huts with mere mud walls and thatched roofs without help either from the Government or the landlord. The bigger landlords in rural parts must be treated on a par with industrialists of the urban centres and they may be persuaded to make a contribution to the housing of the agricultural workers and other poorer classes of the village community and given similar facilities for construction of houses as we have recommended for the industrial labour.

Development of Health, Sanitation, Communication, etc., to be Tackled First in Rural Areas.

217. The problem of rural housing is at once vast and complicated and presents special difficulties. But as the provision of hygienic houses for the rural population is a common ideal to be realized and as the need for a minimum standard housing in the rural areas is as important as in the urban areas it is incumbent on the Government to formulate and pursue an active rural housing policy. We are of the view that, while the importance of rural housing should in no way be minimized, the problem is so vast, that it may take many years before the State can undertake any large scale ameliorative measures. We hold that the provision of essential amenities should not be delayed on this account. They should be tackled forthwith and substantial progress shown. The urgent needs of the villages are amenities such as hard surfaced roads, protected water-supply and better all-round sanitation which will reduce the incidence of disease and make life even in a hut worthwhile. This should be tackled first before the housing problem is taken on hand. This itself will require large scale planning and the establishment of technical staff to execute the schemes and a large scale mass production of ceramic and pipeware, etc., which will itself be a vast industry worthy of encouragement.

Estimates of Provision of Amenities in Rural Areas.

215. It should be an ideal that every village or group of contiguous villages with a population of 2,000 should have (1) a dispensary, (2) a school for every 500 of the population, the number of children of school-going age up to primary standard being taken as one-fifth, (3) a community hall or bhajan mantap and reading room in addition to the amenities mentioned above.

	RS.
A 30,000 gallon water-supply will cost approximately	20,000
Three miles of road to a village so that no road is more than half a mile from a village centre at Rs. 5,000 per mile	15,000
Drainage system open drains and disposal works	10,000
Dispensary	5,000
Schools—Four schools at Rs. 2,000 each	8,000
Community hall	2,000
<hr/>	
Total	60,000 per village of 2,000 population.

Per capita expenditure will be Rs. 30.

The cost of amenities for a population of 4.2 crores will thus be Rs. 126 crores. Alternatively, if the cost per village is taken as Rs. 40,000 as many of the villages have population roundabout 1,000 per village, the cost of amenities for 35,430 villages will work to Rs. 141.72 crores. Spread over 20 years this will cost Rs. 7½ crores per annum generally.

Estimates of Rural Housing Projects.

219. The crux of the problem of rural housing centres on finances. The problem can be tackled on a large scale only after the standard of income of the rural population has risen and even then considerable state assistance will be necessary. So, before elaborate plans of rural housing are undertaken the State should provide such amenities as communications, protected water-supply, drainage, etc., so as to make village life more tolerable in an all-out endeavour to accomplish it, as in Mysore. At an approximate estimate of Rs. 40,000 per village the programme enunciated above will cost 141.72 crores of rupees for the 35,430 villages in the Province, and with a 20-year progress of construction will absorb Rs. 7½ crores of revenue per annum. This work will require a Chief Public Health Engineer, at least a District Engineer for each district—about 26 for the whole Province, about 100 Assistant Engineering Heads, subordinates, designers, office staff to design and execute. With all this provision, it may take at least 2 years in the minimum before work can be expected to start and to make appreciable progress. Provision of technical personnel for such a large department must receive a very high priority. Ours is a rough estimate and not worked out on any basis. The problem of providing essential services is thus one of stupendous magnitude and it is considered that it cannot be solved within any short period of time. Nevertheless the problem is of primary importance and requires to be faced boldly by the Government and steps taken to solve it within a measurable distance of time. An expenditure of Rs. 7½ crores per annum must be provided for.

It will be seen from the village analysis that each family consists of four adults and a child under 12 years. Based on the average floor space of 75 square feet per individual and 40 square feet per child, each family requires 340 square feet, i.e., the same as the minimum space required in a township; and the housing of 2.1 crores of people will require 42 lakhs of houses.

Cost of a basement of 340 square feet of floor space and an impervious floor in a rural area will cost about Rs. 680 or Rs. 700 each. The cost of 42 lakhs of houses will thus be 294 crores. If this scheme is spread over 20 years and the normal growth of the population is to be provided for, this should be increased to Rs. 400 crores or an allotment of 20 crores per annum.

It is to be understood that this does not provide for houses but only for basements and for the impervious floor, the villager being allowed to put up his own mud walls and thatched roof thereon, or such other type of structure as he can afford. But it is a beginning that is worth making and should help a lot in ameliorating the living conditions of the villager, the backbone of Indian economy.

CHAPTER XIII.

FINANCE—COST OF HOUSING AND WAYS AND MEANS.

Retrospect.

220. Hitherto, we have confined our attention to a survey of existing conditions. We have shown that

(1) there is great scarcity of materials with the result that their prices have risen to unprecedently high levels;

(2) the cost of building construction has, therefore, risen inordinately and consequently, construction of low rent houses is well nigh impossible;

(3) the rise in the cost of construction is of such a magnitude that, besides the working classes, a section of the middle classes has been brought within the orbit of the class which is unable to pay economic rent for accommodation;

(4) at a very conservative estimate, persons falling in the income groups of Rs. 200 per mensem and under cannot afford to pay economic rent;

(5) while the cost of land has risen and does, to some extent, retard building activity—thereby giving rise to conditions of acute shortage in housing—other equally cogent factors have played no less an important part in impeding growth of housing. The cumulative effect of all these forces has been an almost complete cessation of building activity. To summarize, these factors are : (a) high cost of land, (b) high cost of materials, (c) high cost of labour and above all (d) scarcity of materials. Consequently, private enterprise which expects returns on its capital outlay in conformity with the general interest rate cannot be expected to cater to the needs of housing of those classes who are unable to pay economic rent;

(6) public bodies or local authorities like municipalities, panchayat boards, etc., find their resources seriously strained owing to mounting expenditure and have been helpless witnesses of a progressive deterioration in the condition of housing;

(7) industrialists cannot finance housing needs of their employees by reason of the large volume of capital—many times their resources—involved in unremunerative activities of this nature. All these factors have acted and reacted upon each other and produced a problem of poor class housing of such a magnitude that it cannot be solved without State initiative.

Standards.

221. In the preceding chapters, we have shown that such housing as exists to-day for the poorer classes, disregards all standards of health and comfort—let alone the consideration of decency—and has materially contributed to deplorable poor conditions of health in the community and has given rise to the high rate of mortality to which the community is at present subject.

Effect of Rent Control.

222. Rent control necessitated by housing shortage attempts to maintain rents, artificially, at a lower level than would be justified by the general price level and prevents its movement and adjustment in accordance with the laws of supply and demand. It is not our intention to suggest that rent restrictions are not necessary. What we do suggest is that we cannot altogether disregard the fact that restrictions must retard building activity which is and has been a less profitable enterprise than many in the field of investment. The result is a vicious circle which can only be broken by the Government taking the initiative.

Prospect of Investment in Housing.

223. Theoretically, the volume of capital which is likely to be invested in housing is governed by the yield on capital and therefore by the bank rate. The lower the bank rate, the greater the incentive for investment in an activity like housing in which yields have always been low, which is somewhat counterbalanced by the permanency of the asset and the possibility of increase in the value of the asset over a long term of years. Throughout the duration of the war scarcity of materials and their high cost have severely restricted building activity in spite of cheap money. Conditions in the money market are hardening with every likelihood of dearer money. We are, therefore, led to the conclusion that, in the not distant future, incentive for investment in housing may still further be restricted. We apprehend that less money will be invested in housing in the near future. What is perhaps of even greater significance is the uncertainty associated with a rising bank rate and falling prices, which follow hardening in the money market. With prospects such as we have

described, there can be no doubt that only Government initiative can restore such reasonable conditions for the building industry as to deal with the problem which we face.

Efficiency and Housing.

224. The efficiency of a community depends upon its environment which, in its turn, is governed by its housing conditions. It follows that provision of hygienic housing for low income groups who are unable to pay economic rent must be regarded as the responsibility of the State in the interests of efficiency which cannot be calculated in terms of money.

ESTIMATES OF THE COST OF HOUSING.

Difficulty of Precise Estimating.

225. The dislocation of economy occasioned by the war and the consequent instability of present day conditions, the general expectation of a fall in the price levels arising out of the depressed economic conditions which are freely predicted by economists all over the world and the anticipation that very difficult conditions will prevail for many years, have made it difficult for us to estimate accurately the cost of large housing schemes, the execution of which must necessarily be spread over a number of years. Moreover, the data available are themselves not very precise. We have, therefore, not considered it necessary to attempt a detailed estimate of the cost of housing but have arrived at over-all figures of cost which we consider can be relied upon as a basis for enunciation of a housing policy.

Cost—Basis of Estimates.

226. For the purpose of our estimate, we have taken as a basis, the cost of construction per square foot of plinth area to which must be added the estimated cost of land in order to arrive at the total cost of housing.

Variations in Costing and Assumption Made.

227. The cost of construction varies to some extent with the cost of materials, transport, etc., and from place to place depending upon local conditions. The cost must also vary with the number of floors constructed. We are primarily concerned with the housing of the poor classes, industrial workers and other workers falling in low income groups (i.e., in groups having a family income of Rs. 200 and under per mensem). While we do not rule out the possibility of limited vertical development, we consider that our estimates would err on the side of safety if they are based on the assumption that single floor construction will be followed. We have followed this course.

Rates.

228. The cost of construction (single floor construction) per square foot of plinth area was, approximately Rs. 4 during the pre-war period while the present rate for similar construction is estimated at not less than Rs. 10 per square foot.

House Construction Costs—Madras City.

229. We have already shown that, in the City of Madras, the total population which stands in need of accommodation is about 7 lakhs. At the rate of 75 square feet per person—already suggested by us—the total additional plinth area required for 7 lakhs persons works out to 525 lakhs square feet. The total cost for this accommodation works out to 52.5 crores of rupees at Rs. 10 per square foot of plinth area.

Land and Total Costs—Madras City.

230. We have suggested that coverage of land should not exceed one-fourth of the total ground area. It follows that, for a plinth area of 525 lakhs square feet, the total extent of land required will be 21 crores square feet. At an average cost of Re. 1 per square foot for developed land in the City of Madras, the total cost of land required to make up for deficient accommodation, therefore, works out to Rs. 21 crores. It follows that the total cost of housing schemes for the City of Madras is not likely to be less than (Rs. 52.5 plus 21) or Rs. 73.5 crores. Allowing 12½ per cent for the cost of amenities, the over-all cost of housing schemes for the City of Madras may be estimated at Rs. 82.7 or 83 crores.

Alternative Method of Estimating—Madras City.

231. We shall now proceed to check these figures by an alternative method. We have stated, in Chapter IV, that the total number of houses required—for families falling within the income group of Rs. 200 and under per mensem—for the City of Madras, is 165,000. Elsewhere, we have shown that, at the present day prices, the cost of a dwelling unit, which conforms to the minimum standards, is not likely to be less than Rs. 5,000 including the cost of land. It follows that the total cost of 165,000 units will be Rs. 82.5 or 83 crores. The correspondence between this figure and the one deduced in the previous paragraph is remarkable and may be taken to confirm the previous estimate.

Programme—Madras City.

232. We assume that a 20-year programme will be provided to relieve housing shortage. During this period, 20 per cent increase in population is not unlikely, and the cost of housing for a scheme extending over this period will, therefore, be Rs. 83 crores plus 20 per cent of 83 crores, i.e., Rs. 100 crores. This works out to an annual outlay of Rs. 5 crores for 20 years.

Programme for Urban and Semi-Urban Areas.

233. The number of additional houses required in urban and semi-urban areas—without taking replacements into consideration—has been computed at 170,000. We may safely assume that the cost of a dwelling unit—in conformity with the minimum standards which we have advocated—will be definitely less than that in Madras. We calculate that—in urban (other than Madras) and semi-urban areas—such a unit is not likely to cost less than Rs. 3,000 including the cost of land. It follows that, for urban and semi-urban areas, the total outlay for housing works out to Rs. 51 crores.

Programme of Provision of Amenities in Urban and Semi-Urban Areas.

234. We find that 430 municipalities and major panchayat boards in the Province do not have protected water-supply or are not provided with drainage. At a rough estimate, each municipality will require Rs. 1½ lakhs for the provision of water-supply and drainage and the total cost of providing these amenities for all the 430 areas will, therefore, be Rs. 5.375 crores. Allowing for an increase in the population, the total cost of all these amenities may be estimated at Rs. 7.00 crores. Upon the basis of a 20-year programme, the annual expenditure for the provision of water-supply and drainage in these 430 areas, works out to Rs. 35 lakhs, for a period of 20 years. We consider that this cost should be added to the cost of housing which we have deduced in the previous paragraph.

Programme of Provision of Amenities for Rural Areas.

235. In the case of rural areas, where housing development has taken place in a haphazard form, essential amenities like water-supply, hard surfaced roads and proper drainage will, in the first instance, have to be provided. Earlier in the report, we have stated that the cost of providing these amenities in a village will be approximately Rs. 40,000. Upon the basis of this expenditure per unit (village), the provision of these primary amenities and services will cost a sum of Rs. 141.72 crores for all the rural areas of the Province.

Programme of Housing Development in Rural Areas.

236. The value of land is generally low in rural areas and local materials are likely to be somewhat cheaper. It should also be possible to keep the cost of labour—required for construction—at a low level by undertaking building activities during the off season. It is our estimate that the cost of a dwelling unit may, upon this basis, be put at Rs. 2,000. It follows that the cost of providing 42 lakhs of houses required for the countryside will be Rs. 840 crores.

237. We recognize the fact that, judged by these figures, rural housing is a stupendous undertaking and that practical considerations necessitate reduction of commitments. At the same time, we feel that measures designed to improve the general health of the people cannot easily be postponed. Both these considerations have led us to examine the question earnestly and we are of the opinion that for the present it would be sufficient to build permanent basements only leaving the construction of the temporary superstructures to the individual to be replaced later on by a better superstructure with the assistance of the State. We estimate the total cost of construction of basements at Rs. 400 crores. On the basis of a 20-year programme, the construction of basements will involve an annual outlay of Rs. 20 crores.

Twenty-Year Programme.

238. We may now summarize the overall figures of cost as follows :—

20-year Programme.**City of Madras—**

100 crores of rupees or Rs. 5 crores per year.

Urban areas—

(a) Amenities	Rs. 7 crores or Rs. 35 lakhs per year.
(b) Housing	Rs. 61 crores (including 20 per cent increase in population) or Rs. 3.05 crores a year.

Rural areas—

(a) Amenities	Rs. 142 crores or Rs. 7.1 crores a year.
(b) Housing	Rs. 400 crores (basements only) or Rs. 20 crores a year.

Total	..	Rs. 710 crores or Rs. 35½ crores a year.
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Alternative Programme.

239. We have worked out, elsewhere (Appendix XII), composite schemes which are self-explanatory and indicate the scale of annual expenditure in each case. The overall cost of the composite programme is given below :—

Composite Programme.

	Total cost in crores.	Cost on which an ade- quate return is expected.	Balance in crores.	Net expendi- ture per annum for the Govern- ment in crores.
1. Madras City (5 years' scheme)	52.5	17.3	35.2	7.0
2. Urban and semi-urban areas (5 years' scheme).	37.5	17.3	20.2	4.0
3. Industrial workers (20 years' scheme)	75.0	56.0*	19.0	0.5†
4. Government servants (20 years' scheme) ..	36.15	19.15‡	17.0	0.85
5. Rural (20 years' scheme) :—				
(i) Provision of amenities	140.0	..	140.0	7.0
(ii) Housing (20 years' scheme)	840.0	420.0	420.0	21.0
	<u>1,181.15</u>	<u>529.75 §</u>	<u>651.4 </u>	<u>40.35</u>

CRORES.

Total cost of the schemes—

(1) Capital	529.75
(2) Revenue	651.4
Total	1,181.15

Annual expenditure (for the first 5 years)—

City and urban	12.35
Rural	28.0
	<u>40.35</u>

Annual expenditure (in the next 15 years) ..28.0

* Includes levy from employers.

† Share of Provincial Government only.

‡ Includes capital cost of the present expenditure under house rent allowance.

§ Amounts of expenditure on which a return of capital may be expected and hence debitable to loan funds.

|| Amounts for which no return can be expected and which has to be met from subsidies and revenues.

The programme which we favour is calculated to cost Rs. 40 crores per annum for the first five years and Rs. 28 crores per annum during the succeeding 15 years. We recommend that this programme should be harmoniously combined with the programme of development in other directions. We feel confident that, as programmes of development advance and lead to higher productive activity, the expenditure on housing will be found to be less and less burdensome.

Co-ordination between Union Government and Provincial Government.

240. In the previous chapters we have discussed, at some length, the need for co-ordination between the Government of Madras and the Government of India and have arrived at some decision which we commend for the earnest consideration of the two Governments. We have shown that a subsidy of Rs. 200 offered by the Government of India is totally inadequate and is based on costs of construction which no longer prevail. We find that the Government of Bombay which has launched upon an ambitious programme of Industrial Housing expect the Government of India to contribute, towards the cost of these schemes, a sum equivalent to one-third of their total cost. We consider that this should apply uniformly to all provinces.

Liability Apportioned.

241. In the body of the Report, we have shown the liability of the Government of India and the Provincial Government for different schemes.

Clearance of Slums.

242. We have made recommendations as to how the Corporation of Madras, municipalities, local bodies and improvement trusts should all co-operate in the clearance of slums. We have shown how Government can come to their aid and enable them to make an effective contribution in the solution of the problem of housing. We consider that without the active co-operation of local authorities, the solution of the problem may well-nigh be impossible, for we believe that the responsibility for the execution of the works should devolve on them.

Beggar Problem.

243. We have made special recommendations with regard to the solution of the problem of beggars according as they are able-bodied, infirm, diseased or minors.

Housing of Employees.

244. Having regard to the nature of our recommendations, the provision of houses for employees of Government, Local Bodies, Railways and other Central Government Departments will necessarily have to be regarded as the primary duty of the employing authority. It will, however, be appreciated that this will apply in the case of persons having monthly incomes of Rs. 200 and under.

Total Cost of Housing.

245. A reference to the composite schemes which we have drawn up will show that the total outlay for housing works out to Rs. 1,200 crores for the whole Province. If the Government of India bears one-third of the cost, it will have to provide in subsidies to the Province, a sum of Rs. 400 crores in the next 20 years. Against this, the Provincial Government will have to find a like amount in subsidies and would also have to grant loans for the remaining Rs. 400 crores at a low rate of interest, to various agencies charged with the duty of house construction.

Housing Fund.

246. We consider that it is essential for Government to create a Housing Fund in order to finance housing schemes. For, the existing resources are certainly inadequate for the purpose. We suggest the following measures of taxation :—

(a) Housing Cess.—An extra land-cess of 2 annas in the rupee on the land revenue payable by a person to be reserved and earmarked for schemes of rural housing. This is estimated to yield a sum of Rs. 1 crore.

(b) A surcharge of 20 per cent on Property Tax and Professional Tax in all Municipalities and Panchayat Boards to be collected by Local authorities and paid into the Housing Fund. The surcharge proposed is estimated to yield Rs. 20 lakhs. It may be that Government may find it desirable to earmark the collection in one area for expenditure in that area.

(c) We recommend a uniform levy of Rs. 2 per mensem per employee on all Industrial and Commercial establishments employing 5 persons and over. We consider that the cess should be leviable for employees having a monthly income of Rs. 200 and under. We also consider that a rebate should be given for the number of houses conforming to the minimum standards provided by the employer.

(d) We understand that the Entertainments Tax has recently been raised. We consider that the entire increase accruing to the State by reason of increase in the Entertainment Tax should not be passed on to the municipalities but should be earmarked for Housing. We make this recommendation on the principle that the increased yield from this source is largely likely to occur in urban areas where concentration of population is great. In other words, the recent increased income from this source is largely due to the concentration of population and that, therefore, a part of the income from Entertainments Tax should be utilized for improving conditions in cities and towns.

(e) A levy of a Railway Passenger Terminal tax for entry into any Municipal Town including the City of Madras. The yield from this source should be earmarked for financing housing schemes in Municipal Towns. This tax should not be levied for tickets issued for a distance of less than 50 miles so as not to tax local traffic. At a rough estimate this source would yield a sum of Rs. 50 lakhs every year. We consider that the Railway Passenger Terminal Tax should be in addition to the Pilgrim Tax. The rates which we recommend are :—

- (i) Anna 1 for 3rd class.
- (ii) As. 2 for Inter class.
- (iii) As. 4 for 2nd class.
- (iv) As. 8 for 1st class.

CHAPTER XIV.

STATE AID, ADMINISTRATION AND LEGISLATION.

State Initiative and State Subsidies.

247. We have already shown that the solution of the problem of housing is impossible without State initiative. We have also shown that, as a result of the War, a larger percentage of the composition of our society at present falls in income groups which are unable to afford economic rents and that consequently State initiative will have to be supplemented by State subsidies, amounting to 50 per cent or over of the total cost of housing, and by loans at low rates of interest for the remainder. This will be no innovation, for we find that the sister Province of Bombay has already taken such a decision. We also find that in the United Kingdom, where the method of assistance has been different, it has nevertheless been no less substantial in the past and is even more so since hostilities ceased.

Duty of the State.

248. Our recommendations embrace all families having an income of Rs. 200 and under per mensem irrespective of who the employer might be. And in doing so, we have fallen in line with the modern conception of the social duty of the State. We find that, in this respect, Bombay has adopted a similar policy.

Segregation Not Desirable.

249. We are, however, not in favour of segregation of industrial workers from the general population as Bombay schemes would appear to imply and we have, therefore, based our recommendations on the more general and broader basis of income as representing the ability or otherwise of a family to pay economic rent. And we place the population which is unable to pay economic rent as falling within the field of subsidized housing. Having regard to the preponderance of this class in our population, we consider that segregation on the basis of income would be a social evil, which should not be countenanced.

Central Authority.

250. We have considered it necessary to advise the setting up of a Provincial Housing Board which should be charged with the duty of launching housing projects upon the scale suggested by us. The alternative schemes drawn up by us envisage an annual expenditure of between Rs. 8.5 and Rs. 40 crores and we consider that the magnitude of the undertaking justifies the establishment of an independent agency in order to plan, co-ordinate and direct execution of this new activity. In our view, the interests of economy, efficiency, uniformity, co-ordinated finance, proper utilization of resources and speedy execution of housing schemes would be best served by such a Central Authority.

Ministry for Housing.

251. The Bhore Committee recommended the creation of an independent Ministry for Housing, Town and Rural Planning and control of other allied subjects in order to co-ordinate the activities of different departments connected with the development of Housing. We already have a Minister for Housing in the Province.

Provincial Housing Board—Housing Commissioner.

252. We recommend that Government should constitute a Provincial Housing Board with the Minister for Housing as its Chairman and the Ministers for Local Administration, Public Health and Finance as its members and the Housing Commissioner as its executive authority. The Housing Commissioner should be a senior officer of the highest rank similar to that of a head of a Department. He should render advice on finance and priorities as between schemes and should be vested with powers (a) to direct and co-ordinate the activities of different agencies and (b) of review and control. Having regard to the present conditions, it will also be necessary to endow him with powers to procure and distribute building materials and if necessary take steps to expand the production of materials required for the building industry.

Technical Personnel.

253. The nature of the Commissioner's duties will necessitate that he should have the assistance of technical personnel.

Financing of Co-operative Housing.

254. We do not suggest that the Provincial Housing Board should take under its wings co-operative house building activities also. Their finances and operation will continue to be directed by the Government in the Co-operative Department as at present to avoid duplication of expenditure and delays in dealing with two departments. But they will necessarily have to come into the pool in the matter of materials, procurement and distribution.

Propaganda.

255. We consider that the Ministry for Housing would be well advised to enlist the services of appropriate voluntary organizations for disseminating knowledge upon the need and value of good housing and of the measures which must be taken to ensure it.

Supply of Labour.

256. In Appendix XIV, we have given figures indicating the average scale of housing activities in the City of Madras and have compared it with the increased scale of activities in the City of Madras on the basis of a 20-year programme. An examination of these figures will show that the tempo of house building activity would have to be increased to 7 times its pre-war level. This will afford an idea of the extent to which activity in the field of local material will also have to be intensified, and the extent to which the present supply of labour will fall short of the actual requirements.

Building Trade Schools in the City.

257. Greater activity in the extraction or manufacture of local material will, in its turn, require labour in larger numbers. The problem of training of labour in adequate numbers, therefore, assumes importance and we recommend the establishment of Trade Schools for the purpose. These Trade Schools should be provided with courses for carpenters, blacksmiths, masons and maistris for supervision. In our opinion, the Trade Schools should provide facilities for the training of labour in a lower class to a higher class so that labour at present employed in the Building Industry may be able to improve its standard of skill.

Programme of Training.

258. A three months' course may suffice for a brick mason and each school could train a batch of 100 students. Each Trade School can, therefore, turn out 400 artisans a year and it is our estimate that about 40 Trade Schools would be required to provide for skilled labour in adequate numbers for the solution of the housing problem in the City of Madras. We find that the City of Madras has 50 Municipal Divisions and it may be desirable to provide a Trade School in each Division so as to train some extra skilled workmen to serve as a nucleus for the surrounding rural areas. The Trade Schools should also provide one or two years' courses for carpenters and blacksmiths, etc.

Similar Provision in Key Centres.

259. Arrangements on somewhat similar lines will have to be made at key centres in the Province to supply skilled workers for the building trade in other parts of the Province.

Expansion of Production.

260. We have already referred to the need for expanding the supply of local building material. This must necessarily involve an expansion of industries like brick manufacture, lime manufacture, manufacture of doors and windows and the like. We feel that expansion of these industries is a matter of vital moment and would have to be planned systematically. The Housing Commissioner may, in the first instance, have to direct his attention and energies to the expansion of these industries and render necessary assistance.

Provision of Transport Remunerative Undertaking.

261. Transport has been found to be the primary bottleneck in the sphere of materials. Our investigation has shown that the only manner in which the problem of transport can be solved is for the Provincial Government to plan its expansion in co-ordination with the Railways. It is our view that in order to achieve this end, wagons should be purchased by the Provincial Government and handed over to the Railways for the exclusive use of transport of materials. We have given elsewhere our calculations upon this aspect of the transport problem and have shown that this undertaking will by no means be unremunerative.

We estimate hereunder the over-all investment that may be required for transport :—
RS.

(1) Expansion of brick production for the Madras City— About 600 open wagons (for coal transport)	1,20,00,000
(2) Expansion of cement production for the Madras Province— 520 open wagons	1,04,00,000
505 closed wagons	1,51,50,000
(3) Transport of timber— 60 open wagons	12,00,000
	3,87,50,000
(4) Miscellaneous (fittings, tiles, iron materials, etc.)	12,50,000
	4,00,00,000

The amount of investment required for transport is insignificant as compared to the total cost of housing in the Province.

Housing Legislation.

262. As far as we are aware, there is no housing legislation in this Province or anywhere else in India. We consider that a Housing Act on the lines of the English Consolidated Housing Act of 1936 should be placed on the Statute Book.

Housing Act.

263. The main objective to be achieved by the Act will be to apportion responsibility in respect of the housing of the poor, the working classes and families in low income groups upon the various authorities or agencies concerned; to ensure that housing, in general, conforms to the minimum standards prescribed; to end overcrowding; to constitute authorities wherever necessary to undertake housing projects; to provide finance, State subsidies, etc., for launching housing projects and to achieve objects ancillary to the goal of adequate housing.

Complementary to Town and Country Planning Act.

264. In England, housing legislation is considered to be complementary to legislation for Town and Country Planning. It would be an advantage if similar procedure is adopted in this Province. This Act should provide for State aid and should, if necessary, provide for the levy of special taxation in order to ensure its successful working.

Amendment to City Improvement Trust Act.

265. We have recommended that the Madras City Improvement Trust should construct hostels both for students as well as for the public and run them on a remunerative basis. It may be that these objects fall within the purview of section 42 of the City Improvement Trust Act, 1945. But, if the provision of section 42 is considered to be inadequate, we recommend that the Act should be suitably amended.

Amendment to Madras City Municipal Act and District Municipalities Act.

266. We have recommended that open spaces appurtenant to houses in the city should be limited to 20 times the plinth area of the house or to 2 acres. Where such open spaces exceed the prescribed limit, extra space should be subjected to taxation on the basis of market value and not on the rental valuation. If the implementation of this recommendation necessitates the amendment of the Madras City Municipal Act and the District Municipalities Act, we recommend that it should be undertaken.

Amendment to Madras City Municipal Act.

267. We have already stated that, with a view to expedite the completion of construction of buildings (for which a licence has been obtained from the Corporation) the Corporation should have powers to prescribe the period for completion and should be placed in a position to enforce such a condition. Under section 204 of the District Municipalities Act (Act V of 1920) if construction or reconstruction of any building is not completed within the specified period, the permit lapses and a fresh application has to be made before the work can be continued. We recommend that a similar provision may be embodied in the Madras City Municipal Act (IV of 1919).

Beggar Legislation.

268. We recommend that the legislation dealing with beggars at present applicable to the City of Madras should apply to the whole Province. Beggar legislation should provide for compulsory detention of all beggars, the starting of beggar homes for the infirm and the weak, orphanages for beggar children, work houses for the able-bodied and special homes for the diseased and for the financing of beggar homes, orphanages and work houses.

Repeal of Government Buildings Act, 1899.

269. As already observed in Chapter IV, we recommend that the Government Buildings Act, 1899, which grants special concessions to Government buildings should be repealed so that Government buildings and building operations may be brought within the orbit of Building Rules and Regulations applicable to others.

CHAPTER XV.

CONCLUSION.

Objectives.

270. Throughout our enquiry we have pursued, steadfastly, the threefold objective of (a) increasing housing accommodation on well-planned lines in order, not only, (b) to overcome housing shortage but also to see that (c) housing shortage does not recur in the future.

The Problem Resolved.

271. That there is a housing shortage and that such shortage is very acute is universally acknowledged. Our investigations have revealed that shortage occurs preponderantly in the matter of housing required for low income group. As a matter of fact, figures, which we have adduced, indicate that the entire problem resolves itself into one of solving the problem of accommodation for the low income groups and that the only remedy is to multiply low rent houses in as large numbers as may be practicable and as quickly as possible, consistent with the practicability and speed with which the building industry can be expanded. Indeed, we have been so impressed with the seriousness of the problem that we would commend to Government the need for a rapid expansion of building activity. For this reason, we have gone into the question of how such expansion can be achieved and have suggested various methods.

Urgency and Necessity of Housing.

272. We are not unconscious of the magnitude of the problem from the point of view of finance but we consider that it will have to be faced boldly in order to provide the requisite funds for low rent housing upon a large scale if the primary problem of shelter is to be solved within a measurable period of time. Indian and local public health statistics, which we have quoted, show how the absence of hygienic housing has reacted upon the health of the people. We would express our conviction that if the objective of improving the lot of the common man is any criterion—as has been acclaimed so often quite recently—the problem cannot brook any delay.

Housing Standards.

273. The striking feature of the present housing conditions is the almost complete absence of correct standards in housing. Recently, however, there has been a measure of healthy growth of consciousness upon the subject. We must here endorse the necessity for minimum standards, which must not be violated under any circumstances, whatever the level of income of a person may be and whatever the cost of housing which the Government, local bodies and the employers may have to incur. Multiplication of houses without the enforcement of minimum standards is not likely to lead to any improvement in the present low level of health in the country—to which we look forward—under a programme of house-building activity.

State Initiative Essential.

274. We have shown that, having regard to the low level of income of the general population and the present high cost of construction, the cost of a dwelling constructed in accordance with minimum standards is so high that it is impossible for families with low income (Rs. 200 and under per mensem) to pay an economic rent for accommodation. Indeed, the figures which we have given would appear to indicate that the rent, which such income groups can, at best, pay is not likely to exceed 2 per cent of the capital cost of the dwelling. It follows that housing activity for this class of citizen is not likely to attract private capital and that, therefore, low rent housing will necessarily have to be sponsored and subsidized by the State. And, provision of adequate shelter is now recognized as a social duty cast upon the State in all enlightened countries. We recognize that it is the objective of the present National Government to provide adequate standards of life, and we can see no way of attaining that objective without the provision of adequate housing.

Housing and Economic Planning.

275. The heavy outlay on housing is a reflection of the universally low levels of income prevalent in this Province which, in its turn, is due to the very low level of productive activity. We, therefore, feel that if housing activity proceeds apace with expansion in the economic activity of the Province, the problem of housing will progressively become less and less formidable.

Low Cost Housing and the Upper Classes.

276. The pressure exerted on housing by the low income groups affects the problem of accommodation required for the middle and upper classes, who experience difficulty and, who are generally most vocal in ventilating their grievances in the matter of housing shortage. We consider that building activity in low-cost housing is bound to ease the situation for the middle classes and the higher income groups and may even do so to the point of satisfaction.

Urban versus Rural Housing.

277. We have shown that shortage of housing is most acute in the City of Madras and other large towns. Next come urban areas followed by semi-urban areas. Our enquiry shows that, while quantitatively rural housing does not call for immediate attention, the normal standards of rural housing, more particularly from the environmental standpoint, are deplorably low.

Financial Magnitude.

278. The expenditure required for providing low rent housing in the City of Madras is estimated at approximately Rs. 52½ crores. It is our view that the other urban and semi-urban areas in the Province will cost a like amount. The problem of rural housing is, however, a more stupendous one and may easily cost the State a thousand crores.

Urban Growth and Dispersal.

279. Figures of population indicate that increase in the urban population has been comparatively much more rapid than in the case of the rural population. Thus, while the total population of the Province was 3.11 crores in 1881, it increased to 5 crores in 1941—an increase of 61.3 per cent. The rural population increased from 2.81 crores in 1881 to 4.19 crores in 1941, i.e., an increase of 33½ per cent. The urban population, on the other hand increased from 30 lakhs to 80 lakhs or an increase of 166 per cent. During the last six years, the increase in the urban population has been even more rapid and it is now estimated that the urban population in the Province is well over a crore. The general trend is for the City of Madras and other larger towns to grow more rapidly while smaller towns have remained more or less static. We have enumerated, in the report, the various causes which have led to the drift of the population from the village to the town and we consider that with the expansion of industries, the drift may be even more pronounced. We have, therefore, expressed the view that, having regard to this future possibility, the question of co-ordinated planning must be regarded as of the utmost importance so that industry may be dispersed over the Province rather than being allowed to concentrate at a few places. In other words, we deprecate the snowball growth of cities and suggest a plan involving the distribution of economic activity in a larger number of centres avoiding unhealthy growth of mammoth towns. We see no reason why such a policy cannot be enunciated and pursued as is now being done in Western countries.

Priority in Programme.

280. The question of priority, in tackling the problem of housing shortage, must necessarily be based upon the figures indicating the magnitude of the problem as between the City, the urban and semi-urban areas and the rural areas. With the prospect of further drift to the City and the promotion of greater industrial activity, we consider that the City of Madras and other industrial towns must receive prior consideration. We also hold the view that, unless the problem is tackled with courage, here and now, its solution in the future may become well nigh impossible. For this reason, we believe that the problem of housing in Madras, and other industrial cities, must be solved within the next 10 or 15 years if these cities are not to grow in a haphazard manner reminiscent of the 19th Century growth of Western cities.

Housing—Its Sequence in Rural Development.

281. We have already stated that the problem of rural housing is a qualitative rather than a quantitative one inasmuch as the countryside lacks in amenities (environmental hygiene). We are, therefore, inclined to the view that the best manner of dealing with our rural areas would be to provide, to start with, amenities like water-supply, drainage and all-weather roads, along with a measure of rural planning so as to lay down a framework for the development and improvement of housing at an appropriate stage. We would, here invite attention to the fact that, having regard to the possibility of further drift of the population from the village to the town, large-scale expenditure on rural housing, under the present undeveloped condition of amenities, would be in the nature of putting the cart before the horse.

Transport and Building Materials.

282. We have shown that there is a great scarcity of building materials of all kinds. Our enquiry into the causes of scarcity of materials has, in every case, led us to the

conclusion that transport forms the primary bottleneck. Any realistic programme of expansion of building activity cannot, therefore, disregard the problem of transport. We have suggested methods for solving this difficulty and it is our conviction that the first step which Government must take is to make transport freely available for the movement of building materials. We have shown that this is not likely to prove unremunerative and the promotion of measures designed to ease the transport situation should, therefore, offer no difficulty.

Expansion of Brick Industry.

283. We consider that, in the field of materials, the most difficult problem would be the question of expansion of the brick industry and, we are of opinion, that it should be given earnest consideration. Government may well import—or grant facilities for the import of—brick-making machinery so as to render expansion of the brick industry easy and expeditious. Our remarks with regard to the brick industry are largely applicable in the case of the City of Madras where we have investigated the problem in some detail.

Coal and Cement.

284. During our deliberations, it was brought to our notice that cement factories, situated in the Province, cannot function to the fullest extent of their capacity owing to the shortage of coal. We consider that coal supplies in adequate quantities for the cement factories should be ensured, if the programme of building construction for housing projects, upon an adequate scale, is not to suffer.

Steel or Timber.

285. Steel production in India is inadequate for all the requirements of the country, particularly as we believe that housing programmes, upon a somewhat similar scale as we have suggested, are bound to be sponsored by other Provinces in the Indian Union. At the same time, the present paucity of foreign exchange renders it difficult to import steel in adequate quantities for building programmes. Local methods of construction may, therefore, have to be encouraged in order to minimize the use of imported material. This may well result in the use of larger quantities of timber, which we understand is also in short supply by reason of the accelerated exploitation, to which our forests were subjected during the last seven years of the war. The Forest Utilization Officer drew a rather gloomy picture in this regard but we do not share his pessimism.

Varieties of Timber and the Building Industry.

286. Increased building activity means increased utilization of timber. We consider that the possibility of utilizing timbers which are at present not utilized for building purposes should be fully explored, and the use of such timbers, if necessary after treatment, should be popularized. In the West, where the aluminium industry was developed to a high stage of production, during the war years, timber is being replaced by metallic products. It may be that similar substitution in India would be desirable in the interests of conservation of our forest wealth. But, we find that the aluminium industry is still in its infancy in this country and we consider that the housing programmes are of so vital an importance that they cannot be delayed. Hence our desire to bring timbers, which are at present not utilized by the building industry, within its scope. We believe that exchange difficulties do not subsist in the case of Burma and the practicability of importing large quantities of timber from Burma may well repay investigation.

Pre-fabrication.

287. We are aware of the development of pre-fabrication in the field of housing. But the information at our disposal does not warrant any conclusion. The views held are conflicting and we therefore feel that it does not seem justifiable for us to make any recommendation on pre-fabricated houses as a means to speedy construction. A certain measure of standardization and pre-fabrication of components is inevitable for large-scale activities which we have recommended.

Labour for Building Construction.

288. In view of the magnitude of the house-building activity which we have envisaged, the present labour supply, which is based upon building activity in pre-war years, is not likely to be sufficient to cater to the needs of the industry, and considerable expansion in the availability of labour of all classes will be necessary. We have, therefore, suggested the opening of trade schools for artisans and other skilled workers required for the building industry, which should be thrown open for providing instruction to those engaged in the industry. We are not unconscious of the fact that individual output of labour has considerably fallen as a result of the general disturbance in labour conditions, arising out of the war, and we consider that measures designed to render labour more co-operative should be encouraged. Such measures may well take the form of bonuses based upon output.

Availability of Land.

289. No recommendations would be complete without the consideration of land required for house-building activity. Our enquiry has shown that considerable extents of

lands are generally available within the precincts of cities and towns, or in their vicinity. We, however, consider that house-building activities upon a large scale cannot be launched upon without deliberate planning and we have laid down various considerations for such planning.

Vertical Development.

290. We have generally considered the question of Vertical Development. As a rule this form of development is engendered by high land values. We find that land values—except in some cases—have not attained such levels as to encourage Vertical Development. Moreover, public opinion does not, as a rule, favour this form of development upon a large scale as it militates against individual ownership. While, therefore, we do not advocate Vertical Development, we envisage the possibility of its judicious application in the City Madras and other large industrial towns, where it would offer obvious advantages.

Land Values and Uses.

291. The most difficult factor affecting the question of land is the problem of land values. Evidence placed before us indicates that there is a general agreement that land values should be controlled upon the basis of values prevailing in 1939. Having regard to the general agreement in this matter, we have recommended the adoption of this course, although, we notice that in the Town and Country Planning Act of 1947—which came into our hands just as we were completing our report—that this basis has now been abandoned in England. We feel that, for subsidized housing, measures of control over land uses would go a long way towards accelerating the programme of construction.

Controls.

292. Having regard to the complexity of the problem of materials and their transport, we have considered it desirable to recommend not only the continuance of price controls but also the control of procurement and distribution. We are aware of the fact that an influential section of public opinion favours the removal of all controls. But, we are unable to subscribe to this view, and consider that unless production can be increased to such levels as would freely meet all the demands, removal of controls will lead to chaos and may even prove disastrous, at this vital stage of development activity such as we have envisaged in this report.

Building Research.

293. Having regard to the increased importance of building construction engendered by the large programme of housing which we envisage, we consider that the establishment of a Building Research Station to investigate into the materials and methods of construction with a view to reducing costs of construction is essential.

Housing Authority.

294. One of the cardinal recommendations which we have made is the constitution of a Central Housing Authority for the Province of Madras. We consider that this should be a statutory body vested with powers of appraisal of priorities and the allocation of funds. Moreover, it is our view that it should exercise vigilance over the standards of housing and the progress of development of housing. Without such an authority, a periodical review of conditions in the Province would not, in our opinion, be possible. Such an authority can only be set up if a Housing Act is placed on the Statute Book. The Central Housing Authority should be endowed with powers for the procurement and distribution of materials in conformity with the programmes and priorities which it may lay down.

Financial Responsibilities apportioned.

295. Finance will play a predominant role in the promotion of house-building activity. We have already pointed out the preponderance of the low income group in the composition of our society and its inability to pay the economic rent. It follows that the State which has a social duty to perform, must play a leading role in financing projects of this nature. There is general agreement that housing should be regarded as the duty of the Government, the local authorities and the employers. In our recommendations we have apportioned the responsibility among these three agencies. We hold the view that heavy cost of housing renders house-building activity impossible unless the State provides a very large proportion of the cost in subsidies and in loans both to the local authorities, and to employers of labour. In the case of local authorities, their present financial conditions hardly admit of any expenditure upon an expensive activity of this nature. In the case of industry, the cost of housing its entire labour force would be beyond its capacity. We might here state that, in the West, industry has not been held solely liable for the provision of adequate houses for its labour. In India, policy must adopt a helpful attitude if industry is to be promoted and developed. It is our view that the question of contributions by industry towards the cost of housing its workers should be regarded as an all-India problem.

Scale of Union Subsidies.

296. We find that the Government of Bombay has launched upon an ambitious programme of housing in industrial centres and expects the Government of India to subsidize its activities to the extent of one-third of the total cost of industrial housing. There is no reason why this Province should not receive subvention from the Government of India upon a similar scale.

Scope of Union Subvention.

297. We consider that the subsidy of the Union Government should apply to every worker and that no distinction should be made between housing of workers employed in organized industries and other workers or other persons belonging to low income groups. In other words, we consider that the Union Government assistance should embrace the entire field of subsidized housing.

Action Imperative.

298. We have worked out different schemes for financing low-cost housing. An examination of these figures will provide the reason for our optimism, for it will clearly show that the real magnitude of the problem is masked by the formidable figure of total cost. The problem is, after all, not so very stupendous and difficult as to be discouraging and we entertain the hope that the Government will undertake, at an early date, the implementation of our recommendations with energy and courage.

Taxation.

299. We have considered it necessary to suggest some levies in order to provide the nucleus of a fund for house building activity. We have, no doubt, that alternative methods of taxation could be devised.

Ownership of Industrial Housing.

300. During our deliberations, the question whether an industry should own the houses occupied by its workers arose. Several arguments were advanced on both sides. We have examined the question at some length and have given our agreed view upon the subject. We consider that we have put forward an equitable basis for a decision.

Surveys.

301. The implementation of our recommendations will necessitate some surveys.

Psychological Aspects.

302. Our report would not be complete without making a reference to the psychological aspects of the problem. We consider it desirable that propaganda should enthuse the common man in the subject of housing, particularly in regard to the benefit which hygienic housing will confer upon him. We believe that, if he can be rallied to this case, it would not be difficult to make him share—to the extent of his ability—in the sacrifices which the provision of good housing will involve. In the case of the middle classes, incentive of prospective ownership may provide the means to arouse their enthusiasm. We believe that promotion of co-operative housing enterprise would fill the bill.

Exemption from Property Tax for New Houses.

303. In order to encourage and stimulate house construction by private builders and co-operative housing societies, we have recommended that new houses constructed by these agencies within the next two years should be exempted by local authorities from the levy of property tax for a period of five years.

Estimates—A Guide.

304. Our estimates are based upon figures which were furnished to us or which we were able to gather. They must, therefore, be treated with some measure of reserve. We believe that they are reasonably near the target and are definitely indicative of the magnitude of the problem. We feel that they could be regarded as forming a workable basis and will, most certainly, be in the nature of a guide to the solution of the problem.

Designs and the Professions.

305. We have not considered it necessary to go into the details of design for several reasons. We understand that a Provincial Designs Committee is working upon standard designs. We also believe that there should be a measure of diversity in design so as to avoid monotony. We consider that variations in local conditions would necessitate changes in conformity with them. In our opinion, regimentation of this nature is hardly desirable as we consider that advantage should be taken of expansion in house building activity to organize and encourage the professions of architects, engineers and constructors.

Housing and Town Planning.

306. We understand that a Provincial Town-Planning Committee has been recently constituted and we have no doubt that they will examine the question of housing in relation to Town and Country Planning.

CHAPTER XVI.

SUMMARY OF RECOMMENDATIONS.

Serial number.		Reference to paragraph.
1	The Madras Buildings (Lease and Rent Control) Act, 1946, should be kept in operation until such time as the measures for relieving the housing shortage are well on the way	15
2	Housing Development should be properly planned and executed ..	17
3	It should be the responsibility of the Provincial Government to deal with the problem of housing and executing housing schemes ..	19
4	Combined activity by the Government, Local Authorities, Improvement Trust, etc., is necessary for the discharge of this responsibility and it is also necessary to stimulate co-operative, commercial and private enterprise side by side with those of public authorities by affording financial aid, technical advice and rigid enforcement of better standards	19
5	Lands suitable for housing schemes belonging to temples, religious institutions, etc., should be taken on lease, for long terms, say 99 years, instead of purchasing them, in order to reduce the overall cost of the schemes considerably	21
6	The possibility of production on a large scale of the essential parts in a building, such as window and door frames, panels, etc., and building furniture, such as hinges, door bolts, latches, locks, hold-fasts, etc., should be examined and measures taken to achieve their large supply	22
7	Mechanisation of labour should be attempted though it will require an entire reorientation of outlook and the size of magnitude of the work will determine whether such is economically feasible or not	23
8	In respect of distribution of housing among different classes of people, Government servants should be given first priority, municipalities and public institutions should come next; industrial areas will have to be given a high priority. The needs of others belonging to low income groups will have to be taken next in the order of preference. Provision of housing for the homeless also, such as beggars, pavement dwellers, etc., is an immediate necessity. The needs of the middle and the richer classes who can afford to pay economic rent on the class of house they need can be left to co-operative enterprise and private corporations to develop	25
9	The housing of the middle and well-to-do classes should be helped in the supply of materials, provision of building land and such technical help as may be needed to keep the development on right lines	25
10	The prime need of housing for agricultural labour is planned housing development and the creation of satisfactory environment for such development which are exclusively the responsibility of the State	26
11	The bigger landholders can be mobilized to provide housing for their workers but the State should render them every direct and indirect aid for the purpose. The help should be both financial and otherwise. The financial aid should be in the form of subsidies, cheap credit, etc., as in the case of, and on terms similar to, those applicable to industrial establishments	26
12	Big employers like the Railways and industrial establishments should arrange for the housing of all their employees belonging to income groups of Rs. 200 and under with the aid of the State. A 20-year plan for the housing of the Industrial workers in the Province should be drawn and executed	26, 143 and 176

Serial number.	Reference to paragraph.
13 Housing for the poor and the destitute including beggar homes for beggars and dormitories for pavement dwellers should be provided by local authorities aided by the State and run as a social service.	26, 164 and 180
14 As a matter of immediate relief, in order to meet the needs for a few years, for the one lakh of people living in the cheries in the Madras City and requiring some 17,000 houses to lodge them, the authorities should provide roads, drains, sanitation and water-supply and also raised plinths with impervious floors to raise their hutments. This will cost only one-third of the cost of proper housing	38
15 Besides encouraging planned housing development in the extended city limits, open spaces available within the City itself should be explored for housing; for instance the two Government House compounds (Chepauk Gardens and Guindy Park)	43
16 In the City of Madras there are residential and other parts which contain public and private roads which are unsatisfactory and which have not yet been taken up by the Corporation. The Corporation should expedite the taking over of all these roads and bring them to a satisfactory condition as also the private roads, the cost of such works having already been paid for	51
17 The scheme for a canal connecting the Cooum North Branch with the Springhaven basin may be taken up by the Government and proceeded with, if feasible, for the purpose of (1) flushing the Cooum, (2) relieving the congestion at basin wharves, (3) avoiding the double handling of cargo and (4) eliminating the spectacle of a long continuous stream of manhauled carts along some of the main streets and roads of Georgetown and the consequent heavy congestion ..	51
18 With regard to the provision of other amenities in the City Corporation limits such as social service and medical help, the necessity for keeping pace with the expansion of housing should receive adequate consideration.	52
19 Begging must first be made a penal offence and rescue houses provided when an Act prohibiting begging is brought into force. Beggars must be suitably accommodated outside residential areas in the City, and larger towns. The financial responsibility of providing accommodation for the homeless beggars must be shared by the Government, the concerned local bodies and Municipalities and private charity should be encouraged as much as possible ..	55 and 268
20 Hostels for single men and women, boys and girls should be established in the City at convenient places with suitable accommodation such as common halls, dining rooms, common kitchen and canteens. They should be separate for each age group and sex ..	56
21 Temporary housing such as Nissen huts for providing immediate relief as is done in the case of military camps is not commended for the following reasons :— (a) Such accommodation will be wasteful and far outweigh the doubtful benefit it might confer and (b) The generality of the people in the City to whatever group they may belong would not take to such dwellings	57
22 The Government should build hostels for the accommodation of the students and allot to Government servants belonging to low income groups who may later be shifted to residences that may be built specifically for them, the hostels being transferred to the Colleges to which they are appurtenant	57 and 163
23 Rent collectors employed by the Madras Corporation should be trained in the welfare work and should be responsible not only for the collection of rents in respect of tenements and model houses but should also help in the education of tenants, by inculcating in them habits of cleanliness by creating a friendly and sympathetic atmosphere and by tactful handling, so as to ensure a clean and orderly maintenance of these tenements	58

Serial number.		Reference to paragraph.
24	There is urgent need for Women's Associations to help the Government and the Local Authorities in House Property Management such as collection of house-rents and education of tenants for the clean and orderly maintenance of the tenements	58
25	Unlimited growth of the Madras City should be checked by wise planning in order to prevent the metropolis turning into a chaotic and unweld megolopolis	59
26	Measures should be taken to distribute the population in the Madras City more evenly by encouraging the population to move out from crowded areas into new colonies in undeveloped areas such as Adyar, Kodambakkam, Guindy, etc. Certain industries like the beedi industry and match industry, oil mills, the soap industry and cinema studios could also be taken out of the City. The Penitentiary should be shifted out of the City and the area of about 11 acres occupied by it should be used for locating Government offices or as a park	59
27	Milch cattle stables located in the midst of residential areas should be moved out of the City and facilities rendered for the creation of a satellite dairy town and scattered dairy belts conveniently situated along suitable arterial roads or main railway stations	60
28	The sewage from the City should be applied for grass farming	60
29	Government buildings and Government building operations should be subject to the same rules and regulations as are required to be complied with by private bodies. The Government Buildings Act of 1899 should be repealed in the larger interests of the community	61 and 269
30	The Fort St. George and the Glacis should be taken over and included in the City limits and all Government offices in the City should be located in the Fort area or in close proximity thereto thereby helping to relieve congestion in other parts of the City so as to enable one to transact business with more than one Government Department	62
31	The construction of model houses as has been done by the Corporation of Madras, Municipalities like Madura, Ootacamund, Coonoor, Narasaraopet should be attempted by other municipalities	71
32	The sanction and execution of Town-Planning Schemes should be expedited	72
33	Local authorities have shown little regard or no interest in the enforcement of the laws dealing with hygiene, overcrowding, etc., in fearing to risk popularity with the electorate. This fear should be eliminated for the proper executive exercise of social and ameliorative laws	72
34	Land development as housing colonies should first provide the essential community needs such as protected water-supply, sewage system and roads before houses are constructed	76 and 142
35	Vacant lands suitable for housing available in municipal towns, which could not be obtained must be acquired and sold on lease to the public on a rational distribution basis as house-sites for building houses	78
36	Detailed survey of housing, showing the extent of overcrowding existing in each individual area and the number of houses which are below human standards of habitation, should be undertaken to serve as a correct guide for formulating housing schemes, in that area	89
37	The main impediment in the development of amenities in semi-urban parts which require a definite contribution by the local bodies, generally one-half in the shape of long-term loans repaid from out of specific taxes is the want of civic consciousness in the administrations concerned and unwillingness to face the necessary taxation for self-improvement and should be eliminated	104

Serial number.		Reference to paragraph.
38	Land required for house building purposes by the Government, Local Authorities or public utility institutions should be compulsorily acquired by invoking the provision of Land Acquisition Act	111
39	Effective control should be exercised over cost of building land and its value should be fixed by legislation on the basis of prices prevalent in the locality in 1939-40 with an increment subject to a maximum of 40 per cent over the basic price. This control should however apply only to land required for housing schemes undertaken by the Government, the Local Authorities or public utility institutions	111
40	The Government or the Local Authorities should acquire the land required for housing either by outright purchase or on long-term lease extending to 99 years and lease it to the builder in order to exercise effective control over the use of the land. The same policy should be adopted with regard to land belonging to the Government or Local Authorities or public utility institutions ..	112
41	Suitable legislation for requisition of building land should be enacted.	112
42	In taking lease of land belonging to religious institutions, due regard should be paid to the possibility of the religious authorities objecting to specific communities using the land belonging to the concerned religious institutions	112
43.	Co-operative Building Laws should be amended in order to permit the financing of house construction on lease-hold properties ..	112
44	Special land acquisition staff should be appointed to speed up acquisition or requisition proceedings	113
45	Section 17 of the Land Acquisition Act should be suitably amended in order to bring within its scope of emergency the acquisition of land for building schemes undertaken by Local Bodies, Improvement Trust and Building Societies	113
46	Where open spaces appurtenant to houses in the Madras City exceed 20 times the plinth area of the house or 2 acres such extra space should be subjected to taxation based on market value and if this necessitates the amendments of the City Municipal Act, they should be undertaken	114
47	The control of land values should apply to lands selected by the Local Housing Committees for Co-operative Housing Schemes ..	115
48	The land available in any area should be distributed equitably according to the various needs of the community which include provision for residential and industrial areas, etc., before launching housing development schemes	116
49	Wet and cultivated lands within the borders of the City or municipalities which are sources of infection and militate against the health of the locality should be reclaimed and made fit for building in preference to extending municipal limits	117
50	The recent Government orders prohibiting the use of wet lands for building purposes should not apply to areas inside cities and municipal towns or areas contiguous to them	117
51	The Provincial Government should take necessary steps for getting a larger allotment of steel from the Government of India and to see that an adequate share of the quantity is obtained and earmarked for building schemes of this Province	118
52	Madras being favourably situated for the manufacture of special alloy and special electric steels, a specific part of allotment for the Province should be set apart for development of this industry and meeting its own demand for manufactured goods	118

Serial number.		Reference to paragraph.
53	Small scale industries for the manufacture of building furniture such as holdfasts, butt, strap and parliamentary hinges, tower bolts, hasps and staples, padlock bolts, etc., needing small capital should be developed and Government assistance in the form of providing capital for establishing new or developing local industries and securing requisite metal to facilitate manufacture of these articles in large quantities should be rendered	119
54	The rolling mills at Bezwada and Negapatam which are idle on account of transport difficulties for getting raw material should be revived. A steamer should be chartered or purchased outright for transport and the Government should render the necessary facilities of transport and procurement of raw material	120
55	Wagon facilities should be provided by the Government to the cement manufacturers for securing maximum output and for distribution to building industry	121
56	A more extended use of the varieties of country timber other than teak should be popularized for building schemes	122
57	Forest department should increase the supply of timber by a more thorough and systematic working of the forests, replantation and rotational exploitation and by the erection and operation of lumber mills reducing the timber to sizes	122
58	The conditions requiring the return of scaffolding materials such as casuarina poles, bamboos, etc., after usage by builders to Government depots should be removed as their value as fuel will have greatly deteriorated by usage and exposure to weather	123
59	The Government should reduce the cost of timber for building industry as in the case of timber reserved for the Government, railways and municipalities and bring it down to a reasonable level and make it available at a price as near to that allowed for defence purposes as possible	125
60	Royalty on timber such as teak should be brought down to a more reasonable figure	125
61	Forest department should be a service organization for the development of forest wealth, conservation and supply and should not necessarily be required to show visible profits	125
62	Wagon facilities should be provided for transport of timber required for building schemes	126
63	As standardization of doors and windows and their manufacture on a large scale will save material and labour and enable more correct fittings on account of machine operations, the establishment of more saw mills and wood working machinery should be encouraged	127
64	The use of machine for the preparation of bricks on a large scale and on an economic basis should be investigated	128
65	Adequate supply of slack coal should be made available and transport facilities should be afforded for the expansion of brick industry.	129
66	The price of bricks should be controlled by bringing the entire output of the kilns against coal supply to account and allotted specifically to consumers	129
67	As the flooring and roofing tiles come mostly from the West Coast, facilities for their transport should be afforded for the building schemes	130
68	Lorries should be provided for the transport of sand required for bulding schemes	132
69	Transport should be arranged for making the sanitary fittings available in sufficient numbers at the places they are required ..	132 and 133
70	Subsidized contracts for sanitary ware and large expansion of the ceramic industry should be arranged to meet the requirements of building schemes	132 and 133

Serial number.		Reference to paragraph.
71	Pre-fabricated panelled houses are ruled out for adoption upon any large scale	134
72	The pressure on brick trade should be reduced by the adoption of pre-moulded concrete cement hollow blocks and necessary transport of cement should be arranged	134
73	Building research should be set up to improve the standard and the methods of building, building materials and building trade and to reduce building costs, both in urban and rural areas. ..	135, 213 and 293
74	As transport is the primary bottleneck for the building schemes, the Government should build or purchase wagons and earmark them for the building trade including its ancillary manufacturing operations	136
75	Effective and complete control over the prices, uses, production and distribution of building materials should be exercised to prevent black-markets	138
76	The punishment for black-marketing should be imprisonment ..	138
77	A central authority should be set up to control the allotment of materials for building purposes and it should function as an adjunct to the Provincial Housing Board	139
78	Bricks should be purchased by the State at fixed prices and distributed on permits to builders. Controls on similar lines should be introduced for the distribution of cement, building fittings and furniture and other building materials	139 and 140
79	To remove the great paucity of technical men for lower subordinate supervision and control of labour, a large expansion in the grade of overseers and of foremen's class of master builders should be effected as soon as possible	141
80	Building trade schools should be started in important centres for training workers.	141
81	Necessary provision should be made in the Madras City Municipal Act and the District Municipalities Act to cover cases where provision of the amenities are delayed by the public bodies concerned for reasons not beyond their control and where such failure hampers progress of housing development	142 and 162
82	The Government should draw up a scheme arranging for the provision of funds for themselves as well as for other agencies undertaking house construction	143
83	In order to relieve overcrowding and congestion in cities, other urban and semi-urban areas, housing projects on a five-year programme should be launched as early as possible	143 and 144
84	Local authorities should enforce the provision for the renewal of permit if the construction is not completed within the time prescribed	144 and 146
85	The City Municipal Act should be suitably amended to make provision enforcing renewal of permit in the case of construction not completed within the time prescribed	144 and 146
86	New houses constructed by private builders and co-operative housing societies within the next two years should be exempted from the levy of property tax for a period of five years	147 and 303
87	One-room tenements as family residences should be put an end to ..	149
88	The kitchen must always be separated from the living-room ..	149
89	The minimum floor (carpet) space required for a dwelling house of six inmates should be 340 sq. ft., the mean floor area per adult should be 75 sq. ft. and for a child under 10 years 40 sq. ft. The minimum floor area of a living or a bed-room should preferably be 120 sq. ft. but in no case should it be less than 80 sq. ft. The height of a room should not be less than 9 feet from the floor level. In the case of flat roofs, the minimum height should be 10 feet. The minimum plinth level should be 18 inches above	

Serial
number.Reference to
paragraph.

- the level of the centre of the nearest street. The height of doors should not be less than 6 feet 3 inches but should preferably be not less than 6 feet 9 inches for main doors. The width of doors should not be less than 3 feet for main doors but may be as little as 1 foot 9 inches for bath-rooms. The area of windows and ventilators should in no case be less than one-sixth of the floor space
- The kitchen should not be less than 60 sq.ft. in area. The bath-room should not be less than 24 sq.ft. The lavatory should be of the minimum size of 16 sq.ft., kudams or verandas when provided, should be adjacent to the kitchen. Essential amenities should be provided for each house
- The minimum housing standards prescribed should be applicable to all house construction undertaken by whomsoever it be without exception 151
- 90 With an increase in housing accommodation, rigid enforcement of the rules for abatement of overcrowding should be insisted on .. 153
- 91 House building projects should avoid the formation of slums of the future 153
- 92 Designs and lay-out of houses should not infringe the principles of town-planning and architecture, and should avoid regimentation.. 154 and 305
- 93 The Government and local authorities should insist on the lay-outs and building plans submitted by the builders being prepared by qualified architects, engineers, draughtsmen or surveyors licensed for the purpose 154
- 94 A law requiring the registration of practising architects and engineers should be enacted as in the case of medical practitioners .. 155
- 95 For giving the town-planning personnel, employed by local bodies, adequate training, diploma and licentiate courses in town-planning including building construction and architecture should be instituted. 156
- 96 The density of housing should not be more than 18 houses to the net acre in the City and big towns and 10 to an acre in agricultural areas 157
- 97 The proportion of built up area to the site area should not exceed 1: 4. 157
- 98 In the case of one-ground plots, the height of a building should be restricted to 2 floors or 25 feet 157
- 99 Vertical development may be permitted in special cases to avoid long leads to places of business.. .. . 160
- 100 Any colony developed should provide for a balanced distribution of sites for different income groups, domestic service and adequate shopping facilities and other amenities not being forgotten.. .. 161
- 101 Each colony should provide for a primary and adult school, health and welfare centre, romping ground for children, play fields for not so young, a dispensary, a reading-room, a meeting place, a co-operative store, a market, a post and telegraph office, administrative buildings, cattle shed and other necessary amenities .. 162
- 102 Co-operative agriculture of garden lands in the open spaces reserved for parks and gardens should be encouraged especially in rural areas and the ideas, "grow more vegetables" for nutrition, "grow more fruit" for health and "grow more flowers" for beauty should be infused into the minds of people 162
- 103 Students' centres in suitable localities with hostel accommodation and other amenities should be developed, separate for each sex .. 163
- 104 A reasonable portion of income which can be applied to payment of rent should be 10 per cent for income groups of Rs. 200 per mensem and below; 12½ per cent in the case of income groups above Rs. 200 to Rs. 500 per mensem and 15 per cent of the income in the case of income groups above Rs. 500 per mensem .. 166

Serial number.		Reference to paragraph.
105	Rs. 200 per mensem should be fixed as the upper limit of income for low income groups in this Province	167
106	Every public servant or worker should be required to pay rent for the accommodation provided on the scales prescribed	168
107	The maximum rent charged for any building constructed out of public or quasi-public funds should not exceed 10 per cent of the occupiers' earnings, including those of the dependants. But this should in no case be less than the cost of maintenance of the building, services and taxes, even where the value of services and taxes exceeds the 10 per cent limit	168
108	Subsidized houses for low income groups should be generally allotted to the low income groups and if allotted outside that group, rents up to 15 per cent or more as prescribed should be leviable irrespective of the standard rents of the houses	168
109	Co-operative agency is recommended as the best agency to cater to the housing needs of persons of moderate means	172
110	The facilities extended to co-operative societies in the matter of acquiring land, making material available, etc., should also be extended to corporate bodies which work for no profit	172
111	Private companies engaged in building trade with the motive for profit should not be given any financial help from the Government.	172
112	The Government and local bodies as the biggest employers should set an example in the matter of housing their employees especially of low income groups (Rs. 200 and under) and should undertake immediately housing programmes for the purpose on a 20-year basis	173
113	Interest-free advances to low-paid Government servants for house construction should be granted at least to the extent of two years' salary repayable in not less than 8 years	173
114	The expenditure which the Government are now incurring in the grant of house-rent allowance to their employees should be capitalized to meet the cost of construction of quarters for their servants.	174
115	With regard to housing of the industrial workers and the employees of local authorities, the Provincial Government should subsidize the cost of such housing to the extent of 25 per cent and secure another 25 per cent from the Union Government	175 and 178
116	The Government should give loans to the local authorities to the extent that may be required by them for launching the housing schemes which should be interest free repayable in a period not exceeding 40 years	175
117	Subsidies and loans, same as those recommended for municipalities and local bodies, should be extended to the City Improvement Trust in so far as they relate to slum clearance, rehousing and housing the displaced	175
118	Where the Government have contributed substantially to industrial housing schemes, the Government may take power to create an organization to exercise full authority over the control of such housing. The ownership, operation and distribution of housing should also vest in such an organization	178
119	Local authority concerned should provide housing for the unattached employees, aided by the State, on the same lines as for industrial workers of low income groups	179
120	The Madras City Improvement Trust should work out a scheme for the accommodation of the floating population on a remunerative basis	181
121	Local authorities coupled with public effort must display sustained interest in forming co-operative housing societies for the purpose of providing cheap houses suited to different income groups in each place	200

Serial number.		Reference to paragraph.
122	Local Bodies must provide facilities to co-operative housing societies for development in the preparation of layout, construction of roads and provision of essential amenities	200
123	Whenever the Government, municipalities, improvement trust and similar bodies have at their disposal lands to sell or lease for long terms for construction of houses, they should be given preferably to co-operative housing societies at reasonable rates, without auction.	200
124	Whenever Town-Planning schemes are undertaken some portion of the areas should be reserved for the poorer and the lower middle classes	200
125	In the case of co-operative house building societies loans to members may be given to the extent of eight times the paid-up share capital and the maximum credit limit may be fixed at Rs. 20,000 ..	201
126	The Government should grant loans to co-operative societies and even to corporate house building schemes which have no profit motive at rates not more than their borrowing rate plus one-fourth per cent to cover charges	201
127	The State loans to Public Utility Bodies like co-operative societies should be spread over 60 years as in the case of the United States Federal Housing Authority Loans	201
128	Before launching an elaborate rural housing programme a comprehensive survey of the rural housing conditions should be undertaken	212
129	For improving the housing conditions in rural areas the measures suggested for low income groups and for improvement of slums in the City and urban areas must be adopted in rural areas also. Minimum housing standards must be laid down and they should be enforced. Type-designs for new houses should be made available to the villagers and a suitable machinery should be set up for the purpose	213
130	Rural housing should be looked upon not only from the point of view of providing houses to the rural populations but also of providing non-seasonal employment	213
131	The Land Improvement and Agriculturists' Loan (General) Rules should be revived with suitable modifications and the scheme popularized by reducing the rate of interest, spreading the period of repayment over a long term of years and by speedy disposal of loan applications	214
132	The feasibility of forming a co-operative housing society for a group of villages providing dwellings for the villagers on hire purchase system may be taken up for investigation by the Co-operative Department for adoption	215
133	Amenities such as hard surfaced roads, protected water-supply, drainage and better all-round sanitation should be tackled first in villages before elaborate plans of rural housing are undertaken. A twenty-year scheme should be undertaken for the provision of essential amenities in the villages as early as possible	217 and 21
134	Basements with impervious floor may be provided in villages, the villager being allowed to put up his own dwelling, so that a beginning may be made in ameliorating the conditions of the villager. A twenty-year scheme for the whole Province should be launched for the purpose	219
135	The Government should formulate a housing policy and programme for the whole Province which should be harmoniously combined with the programme of development in other directions	2
136	For financing housing schemes the Government should create a housing fund and raise money through taxation, viz., (1) housing cess, (2) a surcharge on property tax and profession tax, (3) a uniform levy per employee on industrial and commercial establishments, (4) a portion of the Entertainment tax to be earmarked for housing and (5) Railway passenger terminal tax ..	246

Serial number.		Reference to paragraph.
137	The Government should constitute a Provincial Housing Board with the Minister for Housing as its Chairman and the Minister for Local Administration, Public Health and Finance as its members and Housing Commissioner as its Executive Authority for directing and controlling housing policy and projects ..	252
138	The Provincial Housing Board should not take under its wings Co-operative House Building Activities also but they must come into the pool in the matter of procurement and distribution of materials	254
139	The Ministry for Housing should enlist the services of voluntary organizations in disseminating knowledge on the need and value of good housing	255
140	Housing Legislation on the lines of the English Housing Act, 1936, should be enacted for this Province	262
141	Section 42 of the City Improvement Trust Act of 1945 should be suitably modified if found inadequate for enabling the Trust for constructing hostels for students and the public to be run on remunorative basis	265
142	Industry should be dispersed in the Province instead of being allowed to concentrate at a few places	279
143	In tackling the problem of housing shortage, the City of Madras and other industrial towns should receive priority consideration ..	280
144	The Union Government assistance should embrace the entire field of subsidized housing	297

MADRAS,

Dated 20th December 1947.

L. VENKATAKRISHNAN,

Chairman.

R. SURYANARAYANA RAO.

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Secretary.

MINUTES OF DISSENT FROM THE REPORT OF THE MADRAS PROVINCIAL HOUSING COMMITTEE.

BY

M. B. Chablaní.

ON CONTROL OF COST OF HOUSE-SITES.

In paragraph 110 of the report, reasons for the high cost of building lands have been given and in paragraph 111 certain measures to control the cost of house-sites have been recommended. I consider that the reasons given in paragraph 110 do not take into consideration the general trends in the economic structure of the country as a whole. It is my belief that the phenomenon of increase of land values should be examined in the light of economic developments in the country as a whole.

2. The reasons stated by the Committee on the very high cost of house-sites are the following :—

(a) the very high inflation of prices that has taken place in commodities, have had their repercussions on land values ;

(b) the enormous outlay of funds in schemes connected with the war and the inordinately high rates paid for the works have put very large sums of money in the hands of a large body of people, the new rich ;

(c) need for secure investments for such large sums ;

(d) desire to possess land particularly in favoured localities and the consequent scramble for house-sites ; and

(e) the speculative fever among the professional land agents, the speculating fiend and the land grabber have fostered and helped this phenomenon.

3. The question is whether there has been so much speculation in land as has been suggested by the Committee. I would invite attention to the fact that the term " speculation " is open to very wide interpretation even in economic terminology, its meaning ranging from, say, investment in anything below gilt-edged securities to sheer gambling. As a matter of fact, speculation could rationally be subdivided into illegitimate and legitimate speculation. Illegitimate speculation is very akin to gambling, and the big profits that are sometimes made, as a result thereof, carry with them no corresponding economic service to the community. Illegitimate speculation implies the deliberate manipulation of market conditions with a view to profit. I suggest that land has been and is so expensive a commodity that cornering of land by one individual or by a ring of investors howsoever, financially powerful, is almost impossible. It is a matter for consideration if such a state of affairs really subsists. I would suggest that there is no reason to believe that there has been much illegitimate speculation in land which would be the duty of the Government to stop or control.

4. What has really happened is that some transactions in property have occurred because of the acute shortage of housing, in order to obtain vacant possession of living accommodation. The higher prices paid in such cases are merely an operation of the law of " Supply and Demand " and have resulted in the rise of land values in urban areas. The rising value of land, has, in its turn led to further activity in land sales and purchases. With increase of activity in the land market, some persons have, no doubt, bought land as a means of investment in the expectation that being in short supply, it will yield still higher values. I do not know if this can be regarded as speculation, for it has been occasioned by the operation of economic conditions under the general pattern of economy prevailing in the country, which is itself based upon the law of " Supply and Demand."

5. The observation of the Committee that inflation of prices that has taken place in commodities have had their repercussions on land values is quite true and merely confirms my conclusion that this phenomenon is only a part of the general trend in the economy of the country, largely resulting from inflation. If we accept the fact that inflation has occurred, we cannot but reconcile ourselves to an all-round increase in prices to a level consistent with the degree of inflation to which our economy has been subjected. If the rise in land values is compared with the rise in wages or cost of materials it will be found that the rise in the level of prices of land has even lagged behind the level of prices in other directions.

6. Land being a commodity the value of which has always been expressed by large sums of money, increase in its value as expressed in currency generally creates the impression that land values have risen inordinately, in comparison with the rise in prices of other commodities. It is, therefore, a matter for consideration if the statement that there has been speculative activity in land can, at all be sustained.

The recommendation made in paragraph 111 of the report, would, therefore, appear to be based neither upon a correct appreciation of the causes which have led to an advance

in land values, nor with their relationship to the general economy of the country. The report recommends that—

(a) the price of land should be fixed upon the basis of prices, current in a locality in 1939-40;

(b) that an increase of a maximum of 40 per cent over this basic price may be allowed in respect of land acquired; and

(c) that such control of prices should only apply to land acquired for Government, or any local authority like a municipality, or a public utility concern like a co-operative society.

This recommendation is stated to have been made on the analogy of the provisions of the English Town and Country Planning Act, 1944, which according to the report, provides that "land required for public purposes which include housing, could be compulsorily acquired and compensation payable on such acquisition would be based on the prices of land prevailing on the 31st March 1939, *together with an addition limited to a maximum of 30 per cent of such prices.*" I have studied the provisions of the Town and Country Planning Act, 1944 of England with great care, but I have failed to find any general provision for an additional compensation limited to a maximum of 30 per cent on the prices prevailing on the 31st March 1939. What the Act provides for is, for some supplementary compensation in the case of owners-occupiers and some supplementary compensation in the case of improvements done to the land after the 31st March 1939, and before the time of service of the notice for acquisition. The recommendation for additional compensation of a maximum of 40 per cent over the price current in 1939-40 is not, therefore, strictly based upon the analogy of the English Act.

7. This suggestion, moreover, is against the economic trends in the country. I would invite attention to the announcement of the Government of India that it is their belief that the index of prices in the post-war period is not likely to be lower than 260, taking 100 as the index of prices in 1939. As a matter of fact, in all the decisions which the Government of India have taken in regard to salaries, etc., this has formed the basic assumption. I wonder, if, in the face of such an authoritative decision, it would be, at all, desirable to fix land values on the basis recommended in the report.

8. During the deliberations of the Committee, I have had occasion to point out that the control of land values provided for in the English Town and Country Planning Act of 1944 has since been given up by the Town and Country Planning Act of 1947 which was placed on the Statute Book on the sixth of August 1947.

Section 50 (1) of this Act reads as follows:—

"Section fifty-seven of the Act of 1944 (which provides for the assessment by reference to the prices current in 1939 of the value of interest in land which are compulsorily acquired) shall not apply to compensation in respect of a compulsory acquisition of land in pursuance of a notice to treat served after the passing of this Act."

9. If the recommendation in the report is based on the analogy of the provisions of the English Town and Country Planning Act of 1944, that analogy has now ceased to exist and I consider it inadvisable to recommend legislation here on the basis of a piece of legislation which has since been abandoned in an advanced country like the United Kingdom, no doubt for cogent reasons.

10. It might be argued that conditions in that country are different from conditions in our country. I have already discussed above that the control of the type recommended is not even in conformity with the economic conditions in our country.

11. The question is, if it is really necessary for Government to control land values and whether it is not possible for them to adopt alternative methods to force land values down. Economic thought in the country generally favours lower levels of prices—which cannot be achieved except by the pursuit of a deliberate policy of deflation and deflation is itself bound to effect land values. For, investment in land is by no means remunerative. Land values will, therefore, undoubtedly collapse with the general fall in prices particularly if a policy of expansion of industry is simultaneously pursued.

12. The intention of recommending control of land values is to enable lower middle classes to purchase house-sites. It should not be forgotten that buying land has been an expensive undertaking for the lower middle classes at the best of times. I do suggest, that even if land values are stabilized on the basis of the 1939 price, it will still be found difficult for the lower middle classes to afford purchase of lands, for, they have been hit the hardest during the war. I agree, that, at the 1939 level of prices, house-sites will cost less, but the question really is, whether such control can be taken advantage of by the lower middle classes, having regard to the high cost of living in relation to their income. My calculations show that the cost of house-sites is, at present, about 25 per cent of the actual cost of construction of a house. Even if it is assumed that, in the pre-1939 period, land values were one-fifth of their present value, the cost of house-sites during that period

works out to over 30 per cent of the then prevailing prices for house construction. What I wish to suggest is, that—

(a) land values have by no means increased to such high levels as to warrant the conclusion, that, in comparison with the pre-1939 price levels, the cost of house-sites is out of proportion to that of house construction;

(b) the costs of construction have advanced so rapidly that if the lower middle class cannot pay for house-sites, they are less likely to be in a position to pay for the construction of houses under the present day conditions.

13. It follows, therefore, that freezing of land values by reference to the level of prices prevailing in 1939 will not lead to increased house building activity by the lower middle classes to any appreciable extent.

14. The control of land values recommended is *only* for some specific purposes. The mechanical lowering of the values of only a few lands in urban areas thus brought about will, I am sure, lead to chaotic conditions. Furthermore, Government will lay itself open to the charge of legislation devoid of any principle. The proper thing to do under the circumstances is something which would affect the general level of land values in several areas as a whole. This is what is done under the English Town and Country Planning Act of 1947. I shall make some suggestions to this end further down in this note.

15. It will be admitted that land values began rising in about 1943. My enquiry and study in the City of Madras rather indicates that land values at the present time show a tendency to sag. By the control recommended, land-owners who have purchased land at high prices after 1943 stand to lose. It would, consequently, be inequitable to expect such owners to part with their lands at lower prices than those paid by them. Furthermore, any measures compelling the land owners to sell their lands at prices below the general price level will savour of singling out a class of people to be penalized.

16. Such measures will not also serve to deprive the owners of "unearned increment." In any case, persons who have actually drawn the increments will escape. It may then, well be, that instead of appropriating the "unearned increment", Government may by such measures penalise those who have paid high prices for lands in urban areas, where the prospect of future profit generally leads to investment of money in lands on the outskirts of the City, and where land for house-sites will, as a rule, be available.

17. It is, therefore, my view that control of land values as recommended in the report is not only opposed to the trends of the economy of the country but is not likely to reduce the costs of housing to the extent to which it is believed. On the other hand, it will bring in its train, several undesirable elements into play.

18. The best policy would be to control 'use' of lands, any changes in 'use' being subjected to payment of some fees. This is a cardinal feature of the Town and Country Planning Act of 1947. I would recommend some measures on the lines of that enactment rather than the mere control of land values, for certain limited purposes.

19. A still better solution will be to nationalize or municipalize lands in urban areas, only allowing lease-holds instead of the present system of free-holds. For, under modern conditions of City development, it would be difficult to enact legislation of the type recommended in the report without affecting the rights of individuals and without creating other difficulties. The course which, I have suggested, also enables lands in urban areas to be put to the best use from the point of view of the community rather than from the standpoint of the most profitable use to which it could be put by the individual owner, as at present.

20. For these reasons, I wish to dissociate myself from the observations made in paragraph 110 of the report and from the recommendations made for the control of the cost of house-sites in paragraph 111 and in other paragraphs.

THE CO-OPERATIVE HOUSING AND THE PROVINCIAL HOUSING BOARD.

21. In paragraph 254 of the report, it has been suggested "that the Provincial Housing Board should (not) take under its wing the co-operative house building activities also. Their finances and operation will be continued to be directed by the Government in the Co-operative Department as at present, to avoid duplicate expenses and delays in dealing with two departments."

22. Constitution of a central authority has been recommended in the report, in paragraph 259, with a view to promote "the interests of economy, efficiency, uniformity, co-ordinated finances, proper utilization of resources and speedy execution of housing schemes."

23. In paragraph 252 we have recommended that it will be necessary to endow the Housing Commissioner with powers to procure and distribute building materials and if necessary take steps to extend the production of materials required for the building industry.

24. The recommendation that co-operative housing should be taken out of the purview of the Central Authority will simply defeat the very object of the constitution of the

authority, which is essentially to unify and co-ordinate the huge programme of building activities recommended in the report.

25. In other parts of the report it has been recommended that co-operative housing should be encouraged. If co-operative housing is to be really encouraged and if a large part of the housing programmes of the future come under this category and if they are excluded from the purview of the Housing Commissioner, there will be two authorities in the field at the same time and the question of uniformity, co-ordinated finance, proper utilization of resources and, above all, the question of priorities, will become impossible.

26. It must not be forgotten that co-operative housing for industrial labour will have to be subsidized as envisaged in other parts of the report. A part of the subsidized housing cannot be taken out of the purview of the Central Authority as such exclusion will only lead to un-co-ordinated financial programmes. The co-operative housing authorities are bound to come to the Central Authority with their schemes which require subsidies from the housing fund which is recommended to be constituted under the management of that authority. For, I believe, that the suggestion is not made with a view to debar co-operative housing from receiving assistance from the Housing Fund, wherever necessary. There can, therefore, be no question of the Co-operative Department, not having to deal with the Housing Authority altogether. The duplication of expenditure and delay are matters to be dealt with in the organization of the administrative machinery of the Central Authority.

27. The reason cited for the recommendations in paragraph 254 are "to avoid duplicate expenditure and delays in dealing with two departments." In my opinion, it would be a mistake, if large scale housing schemes are directed by the Co-operative Department of the Government, which is not equipped with any technical knowledge which control of housing operations must essentially involve. The Central Authority, however, will have the assistance of the Housing Commissioner and technical personnel as recommended in paragraph 253 of the Report. It seems to me, therefore, if at all co-operative housing should be encouraged and is to achieve good results, it should be subject to the control of the Central Authority. The Co-operative Department could function within its own sphere and could supervise over the administration of co-operative societies which might be formed for the construction of houses.

28. The suggestion in paragraph 254 that the co-operative housing authorities will necessarily have to go into the pool in the matter of materials, the procurement and distribution of which is recommended to be one of the functions of the Central Authority, might also lead to administrative difficulties. The procurement of many of the materials will have to be planned very much in advance and unless all the schemes are under the control of the Central Authority, it will be very difficult to estimate the requirements of materials and to plan their procurement in advance. It is also inadvisable for the Central Authority to distribute materials without exercising any control over their proper utilization.

29. On these grounds, I wish to dissociate myself from the recommendations made in paragraph 254 of the report.

EXEMPTION FROM PROPERTY TAX FOR NEW HOUSES.

30. In paragraph 303 of the report, it is recommended that new houses constructed by private builders and co-operative housing societies within the next two years should be exempted by the local authorities from the levy of property tax for a period of five years. This is stated to be in order to encourage and stimulate house construction. I believe that exemption from the levy of property tax for a period of five years will not constitute such an inducement as to provide a stimulus for house construction because property tax is only a little over one per cent per annum of the capital invested in a building, which is inconsequential in a period of uncertainty and when there is a prospect of lower prices. Moreover it will be very unjust to local authorities to expect them to forego property tax during a period when the increasing demand on services will involve investment of heavy capital expenditure. The construction of new houses will saddle local authorities with many responsibilities. They will have to lay new water mains at their own cost and maintain roads, sewers, and lighting (even if these amenities are provided by those who develop the land). They have also to provide conservancy and a whole host of other municipal services. Exemption from property tax for as long a period as five years may even place a premium on the neglect of such services on the part of the local authorities, in respect of new houses. The recommendations made, therefore, does not serve the purpose envisaged in the report and is even likely to prove harmful to the proper maintenance of Civil Services. Having regard to these considerations, I wish to dissociate myself from the recommendation made in paragraph 303 of the report.

M. B. CHABLANI,
Chairman.

APPENDIX I.

(Vide paragraph 5.)

Dates of Meetings and Attendance of the Members of the Committee.

Name.	18th June 1947.	2nd July 1947.	3rd July 1947.	24th July 1947.	25th July 1947.	* 21st August 1947.	22nd August 1947.	23rd August 1947.	10th Septem-ber 1947.	11th Septem-ber 1947.	12th Septem-ber 1947.	20th Novem-ber 1947.	21st Novem-ber 1947.	27th Novem-ber 1947.	28th Novem-ber 1947.	29th Novem-ber 1947.	30th Novem-ber 1947.	1st Decem-ber 1947.	2nd Decem-ber 1947.	3rd Decem-ber 1947.	6th Decem-ber 1947.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
1 Sri Diwan Bahadur L. Venkata-krishnan, B.A., B.E., I.S.E., retired, Chief Engineer, P.W.D., (Chairman).	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
2 Sri N. M. R. Subbaraman, M.L.A. ..	P	A	A	P	P	P	A	A	P	A	P	P	P	A	A	A	A	A	A	A	P
3 Sri R. Suryanarayana Rao, B.A. M.L.C. ..	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
4 Sri B. S. Murthy, B.A., B.E., M.L.A. ..	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
5 Begum Sultan Mir Amiruddin, B.A., (Hons.), M.L.A. ..	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
6 Sri Raval S. Krishna Ayyar, A.I.S.E., Managing Director, Modern House Construction and Property Com-pany ..	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
7 Sri N. Somaendaram Ayyar, ex-Chairman, Vellore ..	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
8 Sri Rao Sahib C. Narasimham, M.A., B.L., Commissioner, Corporation of Madras ..	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
9 Sri M. B. Chabiani, B.E., M.Sc. (Lond.), D.I.C. (Lond.), A.M.I.C.E. (Lond.), M.I.E., STRUCT. M.I.M.C.V.E., Chair-man, City Improvement Trust ..	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
10 Sri Rao Bahadur J. C. Ryan, M.A., Registrar of Co-operative Societies, Madras ..	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
11 Sri R. D. N. Simham, B.E., M.E. (Hons.), F.I.A., M.T.P.I. (Lond.), Joint Director of Town-Planning, Madras ..	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
12 Sri Rao Sahib M. G. Padmanabha Mudaliar, M.A., Deputy Registrar of Co-operative Societies (Secretary).	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

* Visit to Corporation tenements and middle class housing at Aminjikarai and Buckingham and Carnatic Mills workers' quarters.

† Sri M. G. Padmanabha Mudaliyar was on leave from 8th July to 7th August 1947 when Mr. V. Govindan Nayar, Deputy Registrar, acted in his place as Secretary.

APPENDIX II.

(Vide paragraph 6.)

Questionnaires issued by the Committee.

GOVERNMENT OF MADRAS.

Letter No. R.C. No. 10/1947.

From

Sri Rao Sahib M. G. PADMANABHA MUDALIAR, M.A.,

Secretary, Madras Provincial Housing Committee,

Fort St. George,

MADRAS.

To

Dated Fort St. George, the 20th June 1947.

Sir,

[*Subject.*—Housing—Committee to examine and suggest measures for solving the problem of housing in the Madras Province—Questionnaire issued by the Committee.]

The shortage of housing accommodation in the Province has been getting more and more acute for some time past and Government have appointed a committee to examine and suggest measures to solve the problem of housing in the Province with special reference to urban and semi-urban areas in order to overcome the existing acute housing shortage and to raise the standard of housing generally. The Committee has been requested to submit a report to Government within two months. The information called for in the enclosed questionnaire is necessary for the enquiry to be conducted by the Committee. I request you, therefore, to treat this as special and kindly furnish the particulars required in the questionnaire to reach this office not later than the 28th June 1947. Government will be pleased if a prompt reply is sent to this letter.

Your obedient servant,

M. G. PADMANABHAN,

Secretary, Madras Provincial Housing Committee.

QUESTIONNAIRE No. 1.

1. Name of the Municipality/Panchayat Board.

1941.

1946.

2. Total population as on

3. Total number of houses as on

4. Average number of persons per house.

5. Classification of population according to income groups—

RS.

Group No. I	0 to 30.
„ No. II	31 to 50.
„ No. III	51 to 100.
„ No. IV	101 to 200.
„ No. V	201 to 500.
„ No. VI	501 to 1,000.
„ No. VII	Over Rs. 1,000.

APPENDIX II—cont.

Questionnaires issued by the Committee—cont.

6. Classification of houses according to annual rental valuation. [Please give figures for 1941 and 1946]—

Group No. I	Below Rs. 120.
„ No. II	Rs. 121 to Rs. 360.
„ No. III	Rs. 361 to Rs. 720.
„ No. IV	Rs. 721 to Rs. 1,200.
„ No. V	Rs. 1,200 to Rs. 1,800.
„ No. VI	Above Rs. 1,800.

7. Census of the slum quarters (please give figures for 1941 and 1946)—

- (i) Total number of tenements.
- (ii) Out of (i) number of single-room tenements.
- (iii) Out of (i) number of thatched roof mud walled huts.
- (iv) Out of No. (i) number of thatched roof masonry walled tenements.
- (v) Out of (i) number of tiled, terraced or other permanent roof masonry tenements.

8. Census of the homeless people (1941 and 1946 figures to be furnished)—

- (a) Wage earners—Coolies, cart pullers, etc.
- (b) Indigent poor—Beggars, etc.

9. Has any town-planning scheme been sanctioned in the area of the municipality or panchayat board? If so, please furnish the particulars, and stage of progress in development.

10. Is there any town-planning scheme under consideration or preparation in the area of the municipality or panchayat? If so, please furnish details.

11. (a) Has any town extension scheme been sanctioned in the belt area of the municipality? If so, furnish particulars.

(b) Please give an estimate of the number of additional houses to accommodate the different income categories separately under classification in paragraphs 5 and 6.

12. Are there any model houses in the area of the municipality? If so, what is the number? Give a brief description of the types of the model houses, the plinth area, the number of rooms, their sizes, water-supply, drainage and nightsoil disposal arrangements, provision of electricity and other amenities. Please also send plans of the models.

13. Have any measures for control of rent and house accommodation been adopted in the area? What is the effect of these measures?

14. (a) Are lands suitable for building houses available in the area of the municipality or panchayat? They should be reasonably well drained or capable of being well drained. If swamps are located in the vicinity they should be capable of being drained or filled up at reasonable cost.

(b) Can they be got at fair and reasonable prices?

(c) What is the present average value of the building land in the municipality or panchayat (value of land per ground, i.e., 2,400 sq. ft. to be furnished). How does the above value compare with the values of land in the years 1942 and 1939?

(d) Is it necessary to invoke the provisions of the Land Acquisition Act for acquiring the house-sites? Please give detailed reasons.

(e) Is it necessary to control the value of land by legislation? If so, what do you consider is a reasonable basis for valuation, expressed as a percentage increase on 1939 values?

15. Are there any mills or factories or big industrial concerns employing more than 200 people in the municipal area? If so, furnish the total number of workers employed in each of these concerns. Do the industrial workers live interspersed with general population? If not are there separate colonies provided either by the management of the industrial unit, (2) by public bodies and (3) by private capitalists for the workers? How many houses are there in the colonies and what is the total population housed in these colonies? Have the industrial establishments in the municipality (panchayat) area house building programmes? If so, please furnish full details.

16. Are there any schemes for creation of hygienic houses in adequate numbers and of adequate size for the workers?

17. Are there any co-operative building societies functioning? Please give full particulars on the working of these societies.

18. (a) What is the local price of

- (i) stone for coursed rubble;
- (ii) stone for random rubble;
- (iii) stone jelly;
- (iv) brick jelly;
- (v) hand stone jelly for reinforced concrete;
- (vi) Bricks for 1,000 (sizes to be specified);
- (vii) Sand per unit of 100 c.ft.;
- (viii) Clay per unit of 100 c.ft.;

APPENDIX II—cont.

Questionnaires issued by the Committee—cont.

(ix) lime per unit of 100 c.ft. ;

(x) cement per ton.

Are they easily available ?

(Prices to include conveyance to some central point in the locality.)

(b) Is timber available locally ? If so, what is its price per cubic foot ; Prices for expensive timber like teak, rosewood and common timber like marudu (maddi), jack, portia, agari, yepi (achcha), etc.

(c) What is the maximum quantity per month which existing sources of supply can produce ?

(d) What help, if any, will be needed by them for stepping up production to meet large scale building programmes ?

19. What are the rates of daily wages of the workers employed in the building trade ? Please give particulars in the following statement :—

(a) Skilled labourers—

(b) Unskilled labourers—

(i) Masons { Stone.
Brick.

(i) Adults.

(ii) Carpenters.

(ii) Minors.

(iii) Blacksmiths.

(iv) Others (to be specified).

20. Please enclose a map showing the area of the municipality (panchayat) showing the builtup area, and the non-builtup area and the portion in the non-builtup area included in the town-planning schemes, if any, the open spaces suitable for development of housing, etc.

Please adopt the following conversions : —

(1) Fully builtup areas—Dead black wash.

(2) Sparsely builtup areas which will permit of construction of houses over 20 per cent of the existing number—Black squares hatched.

(3) Garden land and topes—well drained which are suitable for development—with a minimum area of 10 acres—Crimson.

(4) Cultivated areas—dry and high—with the minimum area of 10 acres—Yellow.

(5) Cultivated areas—irrigated areas—which can be drained of the above minimum area—Green.

21. (1) Is there any scheme for the supply of protected water in operation in the area ?

(2) Is any such scheme under execution or contemplation ? If so, please state the present stage of progress.

(3) What is the capacity of the scheme per

(a) diem ;

(b) per head of population ?

(4) Is it capable of supplying any additional population with or without minor improvements ?

22. (1) Is there any scheme of public drainage in operation in the locality ? If so, please state nature—open, underground, individual septic tank and soak pit or other system.

(2) If not, is any such scheme under execution or under contemplation ? If so, please state progress.

23. (1) Have you any system of electric distribution in the locality ?

(2) If so, are all the houses connected ? State the lowest income group or rental of houses which have been so connected.

24. What are the views of your municipalities in respect of providing free housing or on rent limited to 10 per cent of emoluments for the lower income groups ? If so, what would you consider as the highest income group under classification in paragraph 5 which should be so provided ?

25. What is the maximum contribution which the local authority can make in such a scheme ?

26. What are the possibilities of Co-operative House Building Schemes in the locality ?

27. What do you consider should be the method of control exercised in procurement and distribution of materials ?—

(a) Will the local authority agree to set up the requisite panel for the control and distribution ?

(b) Is the local authority in favour of the material being distributed by private agency with (1) priority control and (2) unrestricted ?

(c) State acquiring all materials at fixed price and issuing sales note on stockists for delivery. If so, what would you suggest is the most fool proof procedure which will eliminate black markets ?

(d) State controlling only prices.

APPENDIX II—cont.

Questionnaires issued by the Committee—cont.

QUESTIONNAIRE NO. 2.

1. Do you think that there is congestion in all urban and semi-urban areas in the Presidency due to transfer of population necessitated by the conditions created by the war and that the housing problem in these areas calls for special attention ?

2. Have you any suggestion to make for remedying the present housing shortages in this province in general and in urban and semi-urban areas in particular ? If you want to refer to any town or village and offer any special suggestions with reference to it, the committee will welcome such suggestions.

3. Have you a personal knowledge of overcrowded houses, slums or habitations of the homeless people ? If so, will you kindly furnish information based on your experience ? What improvements will you suggest to remedy the situation ?

4. Have you any experience or knowledge of any housing schemes so far instituted by the Government or Municipalities, Railways, Port Trusts or Industrial concerns for their employees or workers or the general public as the case may be, If so, what is your opinion on them with special reference to the financial aspects of the scheme ? What is your opinion with regard to the adequacy or quality of housing accommodation provided by the above agencies ?

5. Are you in favour of compelling these employers by legislation or otherwise to co-operate with the local bodies and the Government in providing decent and hygienic accommodation for their workers ? If so, what in your opinion should be the nature and extent of their share in these schemes ? Give reasons.

6. The Bhoré Committee suggested that the upper limit of the lower income groups for providing housing accommodation may be fixed at Rs. 100 to 150. Which do you think is the reasonable limit for the province ? The lower income groups may further be divided into three sub-groups—

those drawing below Rs. 30.

„ from Rs. 31 to Rs. 50.

„ from Rs. 51 to Rs. 100.

What is the order of priority in respect of these sub-groups in your opinion for giving relief in the matter of housing accommodation ? What is the kind of housing accommodation to be provided for lower income groups ?

7. Who, do you think, is the proper authority for undertaking the housing schemes with regard to the different income groups, the Government, Municipalities, Local Bodies (District Boards and Panchayat Boards), big employers (Railways, Mills, Burmah Oil Company, Parry & Co., etc.), Commercial Building Corporations, Co-operative Societies and private enterprise, etc. Please give reasons.

8. Should the total financial obligations be shouldered exclusively by anyone of the above agencies considered appropriate for providing accommodation ?

9. Do you suggest that a small subsidy or loan may be given to poorer classes in the slum area to induce them to take advantage of housing schemes that may be formulated by the Government or Local Bodies ? If so, to what extent and to which category of persons such relief measures may be given ?

10. Do you think that reservation of areas for residential purposes necessary and to have control over insanitary and dilapidated buildings ?

11. As housing is deemed a public utility service, should the Government or Quasi-Government bodies or big industrial concerns be required to take up mass production of standard houses on rental basis for floating population, Government Servants or other employees ?

12. What provisions can be made in affording relief to the homeless beggars who cannot afford to rent houses ?

13. Which classes of people will be in a position to pay economic rents ? Can houses or tenements be constructed on economic basis to meet the needs of the lower income groups ? Please give your reasons in full.

14. Have you any idea of the finances required for launching any housing scheme ? If so, can you make any suggestion to meet the financial requirements of the scheme ?

15. What do you think is the minimum housing requirements for a family of average size (3 adults and 3 children) ? Minimum number of rooms, kitchen, open space, latrine, etc., required may be furnished.

16. What is your opinion about the Rent Control Act ? Has it effectively helped the persons in need of houses ?

APPENDIX II—cont.

Questionnaires issued by the Committee—cont.

17. What are the difficulties that now confront the house builder? It is stated that even though sites for building houses are available it is not possible to secure them on account of high cost demanded by land owners. What steps do you suggest to remedy the situation? It is stated that the land value should be controlled by legislation to prevent speculation. What is your reaction to the suggestion?

18. It is stated that even if land is available there are difficulties in procuring essential building materials, such as bricks, cement, lime, iron and steel, timber, etc. What suggestion do you make to remedy the situation?

19. Have you any suggestion to make as regards the lay outs suitable for housing the different income groups given below—

If you have, please furnish them :—

- (i) Up to Rs. 30.
- (ii) From Rs. 31 to Rs. 50.
- (iii) From Rs. 51 to Rs. 100.
- (iv) From Rs. 101 to Rs. 200.
- (v) From Rs. 201 to Rs. 500.
- (vi) From Rs. 501 to Rs. 1,000.
- (vii) Over Rs. 1,000.

QUESTIONNAIRE NO. 3.

1. Name of the Railway, Tramway Company, Port Trust, Industrial Company, Factory or other big employer of workers.

2. Total number of workers and other employees according to income (per month).

	Workers.	Other employees.
(i) 0 to Rs. 30
(ii) Rs. 31 to Rs. 50
(iii) Rs. 51 to Rs. 100
(iv) Rs. 101 to Rs. 200
(v) Rs. 201 to Rs. 500
(vi) Rs. 501 to Rs. 1,000
(vii) Over Rs. 1,000

3. In respect of (2) for how many has housing, if any, been provided by the Company? Please give particulars in accordance with the classification in question 2.

4. Give the following particulars of the types of houses or tenements provided (if any) for the workers, if there be more than one type :—

- (i) Serial number.
- (ii) Name of house type, if any.
- (iii) Income group for which provided.
- (iv) Extent of site on which the tenement or house is put up.
- (v) Plinth area of the tenement or house.
- (vi) Accommodation in the type, viz., number of rooms with their sizes and purpose, such as living room, bed room, kitchen, stores, bath room, lavatory, etc.
- (vii) Cost of building the house or tenement.
- (viii) Rent collected from the worker or employee.
- (ix) Other particulars.

5. Has the company any further scheme of housing for its workers and other employees [besides the existing provision made by it referred to in question 4 (if any)]. If so, please furnish full particulars regarding the number of houses proposed to be constructed in each group, the period by which they are to be built, cost, any contribution towards the cost made by outside agencies, etc.

6. Does the company own or has it acquired any land and, if so, is such land suitable for building or can they be made suitable for building? What is the total extent? How many houses or tenements for the workers and staff are proposed to be constructed on them?

7. If the company has launched on any construction of quarters for its workers, has it secured the necessary quantity of building materials, viz., bricks, iron and steel, timber, cement, etc.? If so, what is the total secured by it under each head? If not, what arrangement has it made for securing the materials? Full information may be furnished.

8. Do you consider that the cost of housing the workers should be borne entirely by the employers? If so, give reasons—

- (i) Rent free.
- (ii) If rents are due, basis of assessment.

9. If you consider that the cost should be shared by others, who all should, in your opinion, contribute towards the cost and what in your opinion should be the fair share of each ?

10. What income groups do you think can pay economic rents ? Give reasons for your views. [NOTE.—If the interest and amortization charges on the capital cost of a building come to 4 per cent, the rates and taxes be taken at $1\frac{1}{4}$ per cent of the capital cost and the maintenance charges $\frac{3}{4}$ per cent of the capital cost, the economic rent for the building will come to 6 per cent of the capital cost, e.g., the economic rent of a building costing Rs. 6,000 (borrowed at 4 per cent) will be 360 per annum or Rs. 30 per mensem.]

11. What is the kind of aid you would suggest to provide hygienic housing for the income groups which cannot pay economic rents ?

12. It is suggested that, before starting any new mill or other industrial concern is permitted, it should be required that it provides hygienic housing for its workers. What are your views on this suggestion ?

13. What do you consider as the minimum standard of housing for the lowest category of income groups ? Give reasons for your views. Please state the nature of accommodation to be provided, such as living room, bed-sitting room, kitchen-pantry or store, individual bath room and lavatory, combined bath and lavatory, bathing enclosure, etc., or community bath rooms and public latrines, with or without water service.

14. If hygienic housing for the workers could be provided, only in the outskirts of the town, beyond reasonable distance from the work centre, what suggestions would you make for easy and quick transport of the workers from their houses to the work centre ?

QUESTIONNAIRE No. 4.

1. Name of the Association.

2. Total number of Government servants in the metropolis and in the mufassal areas classified according to monthly income under the following groups :—

				RS.
Group No.	I	0 to 30.
"	II	31 to 50.
"	III	51 to 100.
"	IV	101 to 200.
"	V	201 to 500.
"	VI	501 to 1,000.
"	VII	Over Rs. 1,000.

3. (a) Of (2) above number of Government servants who own houses.

(b) Of (2) above number of Government servants who occupy Government quarters.

(c) Of (2) above number of Government servants who desire to construct houses if housing sites and other facilities are afforded by the Government.

4. Do you suggest that every Non-Gazetted Officer should be provided with rent free quarters ? If so, give reasons.

5. Do you suggest that it is the normal function of the Government to grant interest-free advances to N.G.Os. for the purchase or construction of houses ? If so, to what income groups, do you suggest that such relief measures be afforded and how should the period of repayment be fixed ?

6. What income groups do you consider can pay economic rents if Government quarters are provided ? Give reasons for your views.

NOTE.—If the interest and amortization charges on the capital cost of a building come to 4 per cent, the rates and taxes be taken at $1\frac{1}{4}$ per cent of the capital cost and the maintenance charges $\frac{3}{4}$ per cent of the capital cost, the economic rent for the building will come to 6 per cent of the capital cost, e.g., the economic rent of a building costing Rs. 6,000 will be 360 per annum or Rs. 30 per mensem.

7. What kind of aid by the Government would you suggest for providing hygienic housing for the income groups which cannot pay economic rent ?

8. What do you consider as the minimum standard of housing for the lowest category of income groups ? Give reasons for your views.

9. What arrangement do you suggest for securing building materials, viz., bricks, iron and steel, timber, cement, etc. ?

10. If hygienic housing for the Government servants are to be provided only in the outskirts of the town beyond reasonable distance from their offices what suggestion would you make for the easy and quick transport of the employees from their houses to their offices ?

11. Do you think that it is the function of the Government to provide transport facilities also to the Government servants ? If so, give reasons.

12. Give the following particulars of the types of houses or tenements, required for Government servants desiring to own houses, if there are more than one type :—

- (i) Serial number.
- (ii) Name of the type.
- (iii) Income group for which required.
- (iv) Extant of site and plinth area.
- (v) Accommodation in the type, number of rooms with their sizes, number of bathrooms, latrines, etc.
- (vi) Other particulars, if any.

QUESTIONNAIRE No. 5.

Bricks.

1. Name of the manufacturer/building contractor.
2. Please furnish details of charges for the following items :—
 - (a) Royalty on brick earth.
 - (b) Excavating and tempering labour units.
 - (c) Pugging and preparing labour units.
3. If pugging is done by machines please give the number of machine hours and costs per machine hour such as power, personal depreciation and hire of machine.
4. Please give details of costs etc., for the different kinds of moulding :—

Machine moulding wire cut.	Table moulded.
-------------------------------	-------------------

 - (a) Machine hours,
 - (b) Power,
 - (c) Labour,
 - (d) Depreciation,
 - (e) The cost of conveying prepared clay to table and removal of moulded bricks to stack in the case of table moulded bricks
5. Please quote the cost of the following kinds of bricks for moulding and stacking :—
 - (i) Ground moulded—Stock size, ($8\frac{3}{4}" \times 4\frac{1}{4}" \times 2\frac{3}{4}"$)
 - (ii) Country size, ($8\frac{3}{4}" \times 4\frac{1}{4}" \times 2"$)
 - (iii) Stacking dried bricks.
6. Please quote charges for loading kilns.
 - (a) Country clamps,
 - (b) Chamber kilns.
7. What is the quantity and kind of fuel required per 1,000 of each kind and size of brick ? Please furnish details.
8. What kind of labour is required for burning brick ? Mention in units their rates.
9. What will be the charges for :
 - (a) unloading—classification and stocking—please give details for each kind,
 - (b) for clearing sites for the next lot,
 - (c) for loading bricks into carts or lorries for despatch, etc. ?
10. Please quote the market price of bricks of each kind ?

QUESTIONNAIRE No. 6.

Lime.

1. Name of dealer/manufacturer.
2. What is the cost of the shells or kankers if delivered at kiln/source ?
Please specify the method of transport and probable cost.
3. What is the type of kiln used ? Is it shallow, artificial draught or high natural draught, etc. ?

4. Please furnish the ratio of shells to yield or burnt lime (quicklime) and slaked lime (powder).
5. What is the local sale price of—
 - (i) *para* of 2.31 c.ft. (4,000 c. inches),
 - (ii) *para* of 1 c.ft.
 - (iii) *para* of 100 c.ft.?
 - (iv) Cannot a unit of 1 cwt. or 1 maund (82-2/7 lbs.) be enforced.
 - (v) It is well known that, freshly slaked lime measuring 5 c.ft. (1 cwt. in weight) can be packed at 100 lb. (1 lb. to a bag of 1.25 c.ft. cement bag size). But it is seen in series of examples in published books to vary from 140 c.ft. to 333 c.ft. for each 100 imperial maunds. In America and other western countries and in parts of Northern India, it is the weight standard that is adopted, will not the weight standard be convenient if a uniform basis is adopted? Can it be made the basis of legislation?
6. (a) What is the quantity and nature of fuel required for burning 100 c.ft. of slaked lime according to existing standards? Please furnish figures for wood, coal, coal dust, charcoal or cinder, etc. ?
 - (b) Please state the source of supply.
 - (c) What is the market price of slaked lime per ton?
 - (d) Please state the labour required for changing the kilns, slaking, unloading and for loading in carts or lorries per 100 c.ft. or 100 maunds.
 - (e) It was noticed that 2 kalams or 4,800 c. inches or about 2.74 c.ft. can be packed in a standard 2-maund bag. Please confirm whether the above procedure can be adopted.
7. Please state the cost of sundry items for—
 - (a) for repairs to kilns,
 - (b) power for driving blowers, if any,
 - (c) water charges, if any, etc.

QUESTIONNAIRE No. 7.

Timber.

1. Name of the wholesale dealer/stockist.
2. What class of timber is in use and acceptable for housing purposes?
3. What are the sources of its supply? Can it be obtained locally or is it imported from West Coast, Travancore, Central Provinces and Godavari forests or Burma?
4. Please furnish the quantity of timber that may be available at the following :—
 - (i) stocks at source,
 - (ii) uncleared forests which can be extracted,
 - (iii) stocks in locality under enquiry (such as City of Madras, Cocanada, Rajahmundry, Negapatam, Trichinopoly).
5. Please quote the prices of the different kinds of timber—
6. Is timber easily procurable? If not, is due to
 - (i) shortage at the source,
 - (ii) high prices,
 - (iii) lack of proper transport facilities at—
 - (a) source to rail head
 - (b) railway.
 - (iv) Stockists holding back stores from the market.
7. Are anti-freezing measures necessary for releasing the timber from the stockists to the market?

QUESTIONNAIRE No. 8.

Cement.

1. Name of wholesale dealer/stockist.
2. What is the local price of cement per ton?

3. Is cement easily procurable ? If not (a) is it due to shortage--
 - (i) of production at factory,
 - (ii) of supply of power,
 - (iii) of supply of coal,
 - (iv) of gypsum.
- (b) If under (iii) is the shortage due to non-availability of coal or lack of transport facilities ?
- (c) If under (iv) is the shortage due to depletion of mines, bad labour conditions or organization of transport difficulties ?
4. Are the difficulties of procurement due to demand of cement at factory in excess of productive capacity ?
5. Are available distribution facilities adequate ? If not, what would you suggest to remedy the defect ?

QUESTIONNAIRE No. 9.

Flooring and Roofing Tiles.

1. Name of the Company/dealer/stockist.
2. What are the sources at present available for procuring flooring, roofing tiles, etc. ?
3. Have you any suggestions to make to improve their supply ?
4. What is the present market rate for 1,000 tiles ?
5. Are transport difficulties applicable to this equally ?
6. Is material available at sources in sufficient quantities ?
7. If you are a manufacturer, what is your maximum productive capacity ?

QUESTIONNAIRE No. 10.

Asbestos Roofing.

1. Name of the stockist/producer.
2. Name of the company.
3. What is the maximum asbestos roofing that can be made available by your company for this province ?
4. How is the material distributed at present ?
5. What are the prospects of a factory in the province in conjunction with a cement factory for the production of the above material in regard to—
 - (i) Availability of cement.
 - (ii) Do. asbestos.
 - (iii) Do. other materials, if any.
 - (iv) Do. other machinery.
 - (v) Other facilities for manufacture.

QUESTIONNAIRE No. 11.

Doors, Windows and Furniture.

1. Name of manufacturer/dealer.
2. What are your views about the mass production of the above material to standard sizes ?

3. Would it not be an advantage to standardize a few sizes, such as—

- (i) Minimum clear opening of doors, 3 feet 6 inches.
- (ii) Minimum height, 6 feet 6 inches.
- (iii) Minimum height of ventilating heads, 1 foot 6 inches.
- (iv) Minimum clear width of windows, 3 feet.
- (v) Minimum clear height of windows, 4 feet.

NOTE.—If the above measurements are adopted the basic outside dimensions will be as follows :—

- (i) For doors without ventilating heads—height (no sills), 6' 9", width 4' 0".
- (ii) For doors with ventilating heads—height 8' 6" (no sills), width 4' 0".
- (iii) For windows without ventilating heads—height 4' 6" × 3' 6".
- (iv) For windows with ventilating heads—height 6' 3" × 3' 6".

4. It is suggested that all heights should be kept constant and width alone varied to different sizes (e.g.)—

(a) Doors under 2' 6" may be single leaved and used for dressing rooms—outside doors for kitchen, etc., doors to bath rooms, etc.

(b) Doors with 1' 9" width may be used for lavatories, water closet, fuel room, etc. Such a standardization will facilitate mechanical fabrication on mass production basis and quick assembly at site. Are the above suggestions acceptable? Please give your opinion on the above.

5. It is suggested that it should be made a practice to build in the hold fasts in position to templates and fix the frames later for avoiding the necessity for hold-ups on account of the non-availability of frames. What is your remarks on this suggestion?

6. It is suggested that door shutters should also be standardized for instance :—

(i) External doors—panelled shutters—glazed for 1/3 top section if there be no ventilating heads.

(ii) External windows—panelled shutters—opening outwards with glazed shutters on the outside for all outer windows.

(iii) Internal doors—panelled shutters—except to bath rooms and water closets which may be braced and battened for economy.

All other types to be treated as extras.

7. What are your views on the above standardization?

QUESTIONNAIRE No. 12.

Doors and Window Fittings.

1. Name of manufacturer/stockist.

2. Name of the dealer or stockists of doors and window fittings.

3. Please state the availability of stock and the approximate cost without liability for the following :—

- (i) Hold fasts.
- (ii) G.I. tubing for floor fixing.
- (iii) Hinges, 5 inches.
Do. 3 inches.
Do. 4 inches.
- (iv) (a) Tower bolts, 6 inches.
(b) Do. 9 inches.
(c) Do. 12 inches.
- (v) Cross bolts locking 9" (plain type on the inside and locking on the outside for doors).
- (vi) Ring locks.
- (vii) Hooks and eyes, 6 inches.
Do. 2 inches.
- (viii) Screws, 1½ inches.
Do. 1 inch.

4. As large quantities of materials are required for housing purposes, do you suggest that it is essential to put them on mass production basis in some workshops under the aegis of the Government or otherwise and manufacture them at reasonable costs.

QUESTIONNAIRE No. 13.

Sanitary Fittings.

1. Name of the dealer or stockists (for sanitary fittings).
2. Please furnish the availability of stock and cost for the following kinds :—
 - (i) Hindustan squatting type (seat should be of the vitrified and glazed earthenware if possible).
 - (ii) Fire clay stoneware or porcelain type without kinks and joints.
 - (iii) European type.
 - (iv) Low type or pedestal type (flushing cisterns).
 - (v) Overhead type cast iron cisterns mosquito proof type (the float valves should be sliding sleeve type).
 - (vi) Flush out cistern type.
3. Is it possible to manufacture locally any of the above varieties or W.C. type of the Madras Corporation on a large scale? If so, can you suggest some names and addresses of pottery makers who can undertake to manufacture locally on a large scale.

APPENDIX III.

(Vide paragraph 6.)

Statement of Replies received to the Questionnaires.

Questionnaire numbers.	To whom issued.	Number issued.	Number of replies received.
1	(a) Corporation of Madras	1	1
	(b) Municipalities	81	69
	(c) Major Panchayat Boards	355	182
2	(a) General Public	124	56
	(b) Heads of Departments	68	19
3	Industrial concerns, Mills, Port Trust and big employers	79	35
4	Service Associations	36	13
5	Bricks	35	12
	(Dealers and Manufacturers)—		
6	Lime	5	4
7	Timber	16	6
8	Cement	17	14
9	Flooring and roofing	35	10
10	Asbestos roofing	6	5
11	Doors and windows and furniture	25	11
12	Doors and windows fittings	41	24
13	Sanitary fittings	13	10
5 to 13	Building contractors	12	6
Total ..		949	477

APPENDIX IV.

(Vide paragraph 7.)

List of Ladies and Gentlemen who gave Oral Evidence before the Committee.

	Name.	Date of evidence.
1	Sri Diwan Bahadur K. S. Ramaswami Sastri, District and Sessions Judge (Retired), Madras.	22nd August 1947.
2	Sri E. A. Lasrado, M.A., I.F.S., Forest Utilization Officer, Timber Supply Circle, Mount Road, Madras.	Do.
3	Messrs. B. W. Batchelor and N. Barlow, representatives of Messrs. Buckingham and Carnatic Mills, Ltd., Madras.	Do.
4	Sri K. V. Thadaneey, District Engineer, Concrete Association of India, Madras ..	Do.
5	Messrs. P. Jayakaran, M. Ganesan and B. Balraj, representatives of the Madras Provincial Scheduled Castes Federation, Madras.	Do.
6	Messrs. V. Pandurangiah (President) and Raghavan Nair (Secretary), representatives of the South Indian Chamber of Commerce, Madras.	23rd August 1947.
7	Mrs. P. Parjatham Naidu, Commandant, I.W.C.C., Government House, Mount Road, Madras.	Do.
8	Messrs. N. V. Naidu and T. S. Krishnamoorthy, representatives of United India Assurance Co., Madras.	Do.
9	Sri V. S. Sreenivasa Raghavachariar, B.A., B.E., Retired District Engineer, Madras ..	Do.
10	Sri K. Subba Rao, representative of Messrs. McKenzies, Limited, Engineers and Contractors, Madras.	10th September 1947.
11	Sri A. R. Rajagopalan, Honorary Secretary, Brick and Tile Manufacturers' Association, Aminjikarai, Madras.	Do.
12	Sri T. K. Devaraja Pillai, Secretary, Aryan Champion Insurance Company, Madras.	Do.

APPENDIX V.

(Vide paragraph 63.)

Municipalities—Comparative position of housing in 1941 and 1946.

Serial number.	Name of the municipality.	Population as on		Per cent of increase.	Number of houses as on		Per cent of increase.	Average number of persons per house		Additional houses required as furnished by municipalities.	Additional houses required estimated on the basis of six persons per house.
		1941.	1946.		1941.	1946.		1941.	1946.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Srirangam ..	26,676	32,452	21.6	4,947	5,060	2.3	5.4	6.4	Not furnished.	349
2	Vaniyambadi ..	31,281	37,429	19.3	3,349	3,686	10.1	9.3	10.1	..	2,552
3	Cuddalore ..	56,017	70,755	26.3	8,447	9,574	13.3	6.6	7.4	1,600	2,219
4	Srivilliputtur ..	34,642	37,404	8.0	9,157	9,497	3.6	3.8	3.9	100	..
5	Guntur ..	80,769	127,055	57.3	14,480	15,120	4.4	5.6	8.4	1,650	6,056
6	Conjeevaram ..	74,635	92,000	23.2	12,461	13,508	8.4	6.0	6.7	2,625	1,826
7	Ootacamund ..	29,989	42,000	40.1	4,318	5,460	26.5	6.9	7.7	..	1,540
8	Periyakulam ..	25,882	28,521	10.2	5,056	5,652	11.8	5.1	5.0	560	..
9	Salem ..	129,702	181,181	39.7	23,830	28,412	19.2	5.4	6.4	..	1,785
10	Trichinopoly ..	159,464	200,000	25.4	20,600	22,500	9.2	7.7	8.9	..	10,833
11	Tiruppur ..	33,099	60,000	81.3	5,375	5,763	7.2	6.1	10.4	600	4,237
12	Devakottai ..	24,316	27,309	12.3	..	6,250	4.4	350	..
13	Tiruppattur ..	22,137	26,095	17.4	3,699	3,821	3.3	6.0	6.8	..	528
14	Bellary ..	56,156	75,000	33.6	10,793	12,055	11.8	5.2	6.2	425	445
15	Chicacole ..	19,711	25,000	26.9	4,133	4,318	4.5	4.8	5.8
16	Palghat ..	55,160	90,000	63.1	10,870	12,500	15.0	5.1	7.2	5,475	2,500
17	Pollachi ..	26,198	37,331	42.4	4,991	5,007	0.3	5.2	7.4	610	1,215
18	Palamcottah ..	31,000	36,000	16.1	6,167	6,417	4.0	5.0	5.6
19	Anakapalle ..	29,249	45,000	53.8	5,015	5,675	13.2	5.8	8.0	1,000	1,825
20	Mangalore ..	81,069	116,563	43.8	13,633	16,746	22.8	5.9	7.0	..	2,681
21	Rajapalayam ..	46,289	55,000	18.9	14,433	15,462	7.1	3.2	3.6
22	Tiruvannamalai ..	33,575	41,189	22.6	4,800	5,416	12.8	7.0	7.6	850	1,449
23	Mayavaram ..	32,670	42,800	31.0	..	6,500	6.6	130	633
24	Chittoor ..	27,846	30,000	7.7	6,049	6,187	2.3	4.6	4.8	3,000	..
25	Udamalpet ..	17,796	20,927	17.6	2,951	3,340	13.2	6.0	6.2	..	148
26	Bodinayakanur ..	28,435	32,000	12.6	4,400	4,664	6.0	6.5	6.8	300	669
27	Tellicherry ..	36,818	38,500	4.6	4,251	4,638	9.1	8.6	8.3	..	1,779
28	Bimlipatam ..	9,870	10,651	7.9	1,934	1,934	..	5.1	5.5	50	..
29	Narasaraopet ..	17,644	21,781	23.4	3,898	4,079	4.7	4.5	5.3	1,700	..
30	Cannanore ..	34,649	40,000	15.4	4,709	4,978	5.7	7.4	8.0	3,530	1,689
31	Masulipatam ..	59,110	75,000	27.5	11,225	13,991	24.7	5.3	5.4
32	Sivakasi ..	16,628	18,240	9.6	4,546	5,062	11.4	3.7	3.6	1,000	..
33	Gudiyattam ..	32,671	43,500	33.4	5,200	6,333	21.8	6.3	6.9	562	917
34	Ellore ..	64,900	82,000	26.4	7,969	7,979	0.1	8.2	10.3	Not furnished.	5,688
35	Tenali ..	45,000	52,000	15.5	7,000	7,600	8.6	6.4	6.8	Do.	1,067
36	Dindigul ..	56,275	75,000	33.3	7,855	9,000	14.6	7.2	8.3	3,975	3,500
37	Gudivada ..	23,822	30,000	25.9	3,435	5,259	53.1	6.9	5.7
38	Nandyal ..	25,886	30,000	15.9	6,162	6,258	1.6	4.2	4.8	2,500	..
39	Poddapuram ..	20,836	22,033	5.7	4,009	3,930	..	5.2	5.6	968	..
40	Adoni ..	35,425	47,806	34.6	7,740	8,375	8.2	4.6	5.7	180	..
41	Chidambaram ..	26,206	31,320	19.5	4,850	5,241	8.1	5.4	6.0	Not furnished.	..
42	Coonoor ..	18,783	20,000	6.5	1,868	2,057	10.1	10.1	9.7	400	1,276
43	Coimbatore ..	130,336	170,000	30.5	Not furnished.	20,372	8.3	..	7,961
44	Hospet ..	26,128	26,128	..	4,131	4,291	3.9	6.3	6.1	1,780	64
45	Dharapuram ..	20,660	27,000	30.8	3,548	3,799	7.0	5.8	7.1	..	701
46	Kumbakonam ..	67,006	86,198	28.6	12,890	13,791	7.0	5.2	6.3	5,275	576
47	Ongole ..	21,184	22,347	5.5	5,068	5,357	5.7	4.2	4.2	1,005	..
48	Palacole ..	19,869	22,852	14.8	4,720	4,961	5.2	4.2	4.6	2,635	..
49	Tadpatri ..	15,184	19,000	25.2	3,529	3,765	6.7	4.3	5.1
50	Virudunagar ..	34,560	42,500	23.0	8,956	9,930	10.9	3.1	4.3
51	Erode ..	39,483	70,000	77.3	4,468	5,177	16.0	8.8	13.5	..	6,489
52	Anantapur ..	21,482	26,000	21.1	3,640	3,719	2.2	6.2	7.0	6,200	615
53	Villupuram ..	23,829	31,000	30.1	4,248	4,443	4.6	5.6	7.0	500	724
54	Karur ..	27,575	40,000	45.1	4,299	4,649	8.1	6.4	8.6	..	2,018
55	Bezwada ..	92,731	150,000	61.7	9,322	10,924	10.7	9.9	13.7	Not furnished.	14,076
56	Tirupati ..	20,138	30,610	52.0	4,914	5,730	16.6	4.1	5.3	703	..
57	Proddatur ..	26,951	36,347	34.9	6,255	6,825	9.1	4.3	5.3
58	Mannargudi ..	23,288	27,471	18.0	Not furnished.	5,128	5.3	Not furnished.	..
59	Vizianagram ..	51,804	72,000	39.0	9,742	10,260	5.3	5.4	7.0	..	1,740
60	Cocanada ..	75,146	14,394	5.2	..	Not furnished.	..
61	Udipi ..	18,043	22,000	22.0	3,400	3,850	13.2	5.3	5.7	Do.	..
62	Kodaikanal ..	9,124	11,757	28.9	1,347	1,420	5.4	6.8	8.3	Do.	540
63	Vizagapatam ..	70,321	120,000	70.6	11,000	13,000	18.1	6.4	9.2	Do.	7,000
64	Chingleput ..	17,834	22,000	23.4	2,908	3,268	12.4	6.1	6.7	Do.	3/8
65	Tiruvarur ..	22,275	30,000	33.5	4,825	5,674	15.5	4.6	5.3	1,285	..
66	Karaikudi ..	Not furnished.	41,334	..	4,752	5,177	7.9	800	1,712
67	Tuticorin ..	75,753	95,000	23,375	4.0	1,250	..
68	Negapatam ..	52,937	Not furnished.	..	8,698	6.1	..	Not furnished.	..
69	Madura ..	239,167	350,000	46.3	28,884	30,435	5.4	8.3	12.0	..	27,998
		2,881,094	3,838,386	33.2	460,543	552,700	20.0	55,571	131,916

APPENDIX VI.

(Vide paragraph 87.)

Major Panchayat Boards—Comparative position of housing in 1941 and 1946.

Serial number.	Name of the panchayat board.	Total population as on		Per cent of increase.	Number of houses as on		Per cent of increase.	Average number of persons per house.		Number of additional houses needed as furnished by panchayat board.	Additional houses needed estimated on the basis of six persons per house.
		1941.	1946.		1941.	1946.		1941.	1946.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Jammalamadugu ..	9,653	14,000	45.0	2,061	2,100	1.9	4.7	6.7	700	234
2	Maddikera ..	8,900	11,000	23.5	2,424	2,114	12.5	3.7	5.2
3	Namakkal ..	12,435	18,000	45.0	..	2,850	6.3	500	150
4	Kampli ..	7,891	10,000	27.0	3,107	2,403	6.7	2.5	4.2
5	Eruvadi ..	9,990	9,900	10.0	2,050	2,150	4.8	4.4	4.6
6	Kadayanallur ..	29,652	32,600	9.8	6,916	8,235	19.0	4.3	4.0
7	Mohanur ..	4,611	6,000	30.1	1,210	1,279	5.7	4.0	4.7	206	..
8	Kallidaikurichi ..	16,031	22,000	37.0	5,400	5,700	5.5	2.8	3.9
9	Valparai ..	37,334	50,000	33.0	..	2,367	22.0	..	6,066
10	Chennur ..	5,255	7,500	42.8	1,188	1,415	19.0	4.4	5.3
11	Melur ..	9,692	13,500	40.8	2,559	3,312	29.5	3.8	4.1	860	..
12	Ganapavaram ..	5,600	6,800	20.2	..	1,100	6.2	..	33
13	Kovur ..	8,933	16,000	79.0	1,300	1,630	26.0	6.9	9.8	510	1,037
14	Akividu ..	8,872	12,000	35.2	1,677	1,850	11.0	5.3	6.5	..	150
15	Yemmiganur ..	12,670	19,000	50.4	2,657	2,916	9.0	4.8	6.5	..	251
16	Melapalayam ..	31,505	45,000	42.9	6,440	8,409	30.0	4.9	5.4	1,000	..
17	Alwartirunagari ..	6,345	7,005	14.0	2,650	2,778	5.0	2.4	2.5	200	..
18	Namagiripet ..	19,608	21,275	8.0	3,920	4,255	8.0	5.0	5.0	Not furnished.	..
19	Madugula ..	7,474	8,200	9.8	1,030	1,069	3.8	7.2	8.0	60	298
20	Sompeta ..	8,086	10,984	35.8	2,210	2,192	*	3.7	5.0	..	*
21	Batlagunta ..	7,871	10,000	27.0	1,678	1,834	9.3	4.7	5.4	150	..
22	Chennimalai ..	3,910	50,000	20.8	715	823	15.0	5.5	6.1	Not furnished.	10
23	Bapatla ..	17,000	24,702	45.0	3,018	4,117	36.0	5.6	6.0
24	Singampuneri ..	5,096	6,500	31.0	1,298	1,411	9.0	3.9	4.6	100	..
25	Karimangalam ..	5,000	5,000	..	941	1,028	9.0	5.3	4.9	100	..
26	Uttamapalayam ..	11,474	13,094	14.0	2,292	2,375	3.7	5.0	4.6
27	Tuni ..	13,053	18,600	42.0	2,100	2,696	28.0	6.2	7.0	800	404
28	Singanallur ..	13,225	20,000	51.0	1,754	2,055	17.0	7.5	9.7	..	1,278
29	Courtalam ..	2,168	Not furnished.	718	100	..
30	Madanapalle ..	Not furnished.	16,000	..	2,680	3,000	12.0	..	5.4	250	..
31	Tiruppuvanam ..	7,850	10,056	28.0	1,519	1,681	10.7	5.2	6.0
32	Ulundurpet ..	11,776	13,000	10.9	1,440	1,537	6.0	8.1	8.4	170	630
33	Kamuthi ..	10,735	12,411	15.0	2,028	2,412	19.0	5.3	5.1	550	..
34	Puliyangudi ..	23,695	30,000	26.0	7,000	7,500	7.00	3.4	4.0
35	Kilasevalpatti ..	2,458	Not furnished.	..	Not furnished.	705
36	Narayanadevarakeri.	5,096	5,400	6.0	1,300	1,400	7.7	3.9	3.9
37	Kalakad ..	16,132	17,587	9.0	4,000	4,473	12.0	4.0	3.9
38	Valpur ..	10,046	13,223	30.0	1,759	1,952	10.9	5.7	6.8	1,750	252
39	Avarigadda ..	8,540	12,000	42.0	1,800	2,200	22.0	4.6	5.5	2,100	..
40	Sriperumbudur ..	4,302	Not furnished.	..	963	994	3.3	4.4
41	Kovilpatti ..	15,114	25,700	70.0	4,660	5,270	13.0	3.3	4.9
42	Chebrole ..	10,500	15,000	43.0	2,130	2,680	26.0	4.9	5.6
43	Attur ..	15,656	18,000	15.0	3,792	4,365	15.0	4.1	4.1	720	..
44	Peelamedu ..	8,308	14,000	68.0	782	1,019	33.0	10.6	13.7	750	1,314
45	Arni ..	19,568	25,947	32.0	3,974	3,282	*	5.0	7.9	750	*1,042
46	Pallatur ..	6,315	9,000	42.5	1,707	1,760	3.1	3.7	5.1	300	..
47	Panruti ..	16,429	20,000	21.7	3,523	3,425	*	4.7	5.8	225	..
48	Alandur ..	13,219	20,000	51.3	Not furnished.	2,545	7.6	575	788
49	Cumbum ..	22,177	30,000	35.3	4,090	4,430	7.0	5.4	6.8	1,500	570
50	Palladam ..	8,000	10,000	25.0	1,421	1,668	17.2	5.6	6.0	70	1
51	Ponneri ..	5,515	6,200	12.4	1,100	1,250	13.6	5.0	5.0
52	Hosur ..	6,412	9,215	43.7	1,310	1,360	3.8	4.9	6.8	300	176
53	Konkuduru ..	4,386	5,000	14.0	815	850	4.2	5.4	5.9	14	..
54	Kalahasti ..	14,704	17,000	15.6	3,049	4,036	32.3	4.8	4.2	600	..
55	Vuyyur ..	6,374	12,000	88.2	1,700	2,000	17.7	3.7	6.0
56	Nilakkottai ..	4,994	6,000	20.1	1,383	1,425	3.3	3.6	4.2	400	..
57	Ambasamudram ..	17,487	23,750	35.8	6,462	6,740	4.3	2.7	3.5	270	..
58	Nanguneri ..	11,955	11,955	Nil.	2,700	3,085	14.2	4.4	3.9	500	..
59	Vedaranyam ..	Not furnished.	14,000	..	Not furnished.	3,178	4.4	500	..
60	Sattankulam ..	8,688	10,000	15.1	2,500	3,004	20.1	3.5	3.3	500	..
61	Sholingur ..	9,970	11,000	10.4	Not furnished.	2,225	5.0	500	..
62	Eral ..	5,293	7,000	32.2	1,900	2,053	8.0	2.7	3.4	400	..
63	Jaggayyapet ..	10,037	13,436	29.2	2,240	2,400	7.2	4.4	5.6
64	Vathiyakaranpudur.	11,000	Not furnished.	..	3,120	3,200	2.5	3.5
65	Amalapuram ..	14,527	18,000	23.9	2,095	2,699	28.8	6.9	6.7	500	301
66	Turaiyur ..	11,000	14,000	27.3	2,500	2,780	11.2	4.4	5.0

* Number of houses in 1946 in less than the number in 1941.

APPENDIX VI—cont.

Major Panchayat Boards Comparative Position of Housing in 1941 and 1946—cont.

Serial number.	Name of the Panchayat Board.	Total population as on		Per cent of increase.	Number of houses as on		Per cent of increase.	Average number of persons per house.		Number of additional houses needed as furnished by Panchayat Board.	Additional houses needed estimated on the basis of six persons per house.
		1941.	1946.		1941.	1946.		1941.	1946.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
67	Kayalpattinam ..	9,991	Not furnished.	..	Not furnished.	3,404	25	..
68	Sendamangalam ..	13,305	15,000	12.7	3,021	3,019	..	4.4	5.0
69	Bhimavaram ..	21,049	34,000	61.5	4,115	4,432	7.7	5.1	7.7	1,400	1,235
70	Satyamangalam ..	8,981	14,089	56.9	2,031	2,163	6.5	4.4	6.5	500	185
71	Papanasam ..	7,241	8,000	10.5	1,500	1,560	4.0	4.8	5.1	250	..
72	Pernambut ..	13,500	19,202	42.2	2,260	3,200	41.6	6.0	6.0	1,700	..
73	Tirupattur ..	12,911	18,164	40.7	2,755	2,782	0.9	4.6	6.5	..	245
74	Sholavandan ..	10,406	13,000	24.8	2,372	2,604	9.8	4.3	5.0	200	..
75	Parchoor ..	4,103	5,215	27.1	1,023	1,322	29.1	4.0	4.0	340	..
76	Gudalur (Madura district).	16,981	22,287	31.2	2,972	3,268	1.0	5.7	6.8	3,000	447
77	Rasipuram ..	17,363	20,000	15.2	4,030	4,478	11.1	4.3	4.0	970	..
78	Ramnad ..	18,152	29,440	62.2	3,978	4,286	7.7	4.5	6.9	500	621
79	Kadiri ..	16,038	19,850	23.8	3,500	3,602	2.9	4.6	5.6
80	Kulasekarapatnam.	11,888	Not furnished.	..	3,131	3,275	4.6	3.8
81	Bobbili ..	21,670	25,540	17.9	4,050	5,460	34.8	5.3	4.7	200	..
82	Nidadavole ..	8,678	14,682	69.2	1,583	2,251	42.2	5.5	6.5	940	196
83	Tirukkattupalli ..	5,609	7,000	24.8	1,072	1,170	9.1	5.2	6.0	200	..
84	Lalgudi ..	8,743	Not furnished.	..	2,090	2,157	3.2	4.1	..	500	..
85	Ichapuram ..	11,159	16,000	43.4	2,850	2,900	1.7	3.9	5.5	110	..
86	Tadapalligudem ..	9,396	14,000	48.9	1,396	1,630	16.8	6.7	8.6	3,260	703
87	Natham ..	8,740	11,000	25.9	2,180	2,200	0.9	4.0	5.0	750	..
88	Perambalur ..	6,998	9,000	28.6	1,731	1,900	9.8	4.0	4.7	100	..
89	Kottur ..	8,000	13,000	62.5	1,700	2,232	31.3	4.7	5.8	7,400	..
90	Karamadai ..	4,000	5,200	30.0	800	843	5.4	5.0	6.2	100	24
91	Sankarankoil ..	14,823	22,000	48.5	4,091	4,888	19.5	3.6	4.5	Not furnished.	..
92	Kurichi ..	14,228	20,480	43.9	1,986	2,636	32.7	7.1	7.8	1,582	778
93	Nannilam ..	6,341	7,508	18.4	1,424	1,462	2.7	4.5	5.1	120	..
94	Uttiramerur ..	12,134	14,180	16.9	2,246	2,517	12.0	5.4	5.6	60	..
95	Krishnagiri ..	16,000	18,000	12.6	3,060	3,400	11.1	5.2	5.3
96	Tenkasi ..	26,913	28,000	4.0	7,388	7,504	1.6	3.5	3.7	2,365	..
97	Tirukkalkikundram.	9,505	9,900	4.2	2,300	2,329	1.3	4.1	4.2	350	..
98	Venkatagiri ..	16,000	20,000	25.0	4,000	4,500	12.5	4.0	4.4	100	..
99	Sivaganga ..	12,319	Not furnished.	..	2,983	3,486	16.9	4.1
100	Guntakal ..	20,414	32,000	56.8	Not furnished.	2,350	13.6	..	2,984
101	Salur ..	20,580	20,580	Nil.	3,755	3,621	*	5.7	5.7
102	Rayadrug ..	16,033	21,572	34.6	3,027	2,960	*	5.3	7.3	800	636
103	Tiruvathipuram ..	12,522	16,500	31.8	2,260	2,564	13.4	5.5	6.4	1,000	186
104	Nellikuppam ..	13,263	16,392	23.6	2,582	2,777	7.5	5.1	5.9	750	..
105	Anaimalai ..	9,160	11,000	20.0	1,624	1,455	*	6.0	7.6	..	379
106	Manapparai ..	5,075	9,500	87.2	1,107	1,518	37.2	4.6	6.3	500	68
107	Gudalur ..	2,900	5,260	81.3	535	840	57.0	5.4	6.3	240	37
108	Kodavasal ..	6,129	Not furnished.	..	1,261	1,325	5.1	4.9	..	500	..
109	Kuttalam ..	6,648	8,000	20.3	1,637	1,772	8.2	4.1	4.5	500	..
110	Huvanihadagalli ..	6,060	6,460	6.6	1,355	1,585	17.0	4.5	4.1	250	..
111	Kollur ..	7,500	12,000	60.0	1,600	1,850	23.3	4.7	6.5	..	150
112	Chodavaram ..	11,241	16,000	42.3	1,900	2,400	26.3	5.9	6.7	1,000	267
113	Narasapatam ..	16,603	Not furnished.	Nil.	2,610	2,745	5.2	6.0
114	Pedana ..	10,404	14,000	34.6	2,394	2,614	9.1	4.0	5.4	800	..
115	Repalli ..	9,767	15,298	56.7	2,014	2,399	19.1	4.8	6.4	910	151
116	Gudur ..	12,000	15,000	25.0	Not furnished.	3,000	5.0	Not furnished.	..
117	Puthur ..	9,537	11,576	21.4	1,400	1,776	26.9	6.8	6.5	234	154
118	Adirampatanam ..	10,867	14,000	28.7	1,969	2,037	3.5	5.5	6.9	Nil.	297
119	Kuppam ..	Not furnished.	5,385	..	1,068	1,110	4.0	..	4.8
120	Anaparthi ..	7,469	9,400	25.9	1,349	1,572	8.7	6.0	5.9
121	Yeditha ..	6,274	6,580	4.8	1,285	1,290	0.4	4.9	5.1
122	Tiruparankundram.	5,749	9,000	56.5	1,296	1,485	14.6	4.4	6.1	500	15
123	Viravanallur ..	16,926	17,496	3.4	6,042	6,200	2.7	3.0	3.0
124	Mottupalayam ..	17,764	22,000	23.9	3,600	4,250	18.0	5.0	5.0	340	..
125	Nandikotkur ..	7,409	9,000	21.4	Not furnished.	2,033	4.5	160	..
126	Arkonam ..	15,476	24,584	26.2	2,648	3,117	17.7	5.8	7.9	Not furnished.	981
127	Kunniyamothur ..	14,000	16,000	14.3	1,660	1,860	12.0	8.4	8.6	..	807
128	Kottaiyur ..	6,244	Not furnished.	..	Not furnished.	1,737

* Number of houses in 1946 is less than the number in 1941.

APPENDIX VI—cont.

Major Panchayat Boards Comparative Position of Housing in 1941 and 1946—cont.

Serial number.	Name of the Panchayat Boards.	Total population as on		Per cent of increase.	Number of houses as on		Per cent of increase.	Average number of persons per house.		Number of additional houses needed as furnished by Panchayat Board.	Additional house needed estimated on the basis of six persons per house.
		1941.	1946.		1941.	1946.		1941.	1946.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
129	Musiri ..	9,167	12,000	30.9	1,759	1,790	1.8	5.2	6.7	..	210
130	Kunnathur ..	9,058	11,000	28.4	1,251	1,411	12.8	7.2	7.8	50	422
131	Badvel ..	5,728	7,000	22.2	1,447	1,590	2.5	4.0	4.4	500	..
132	Avaniyapuram ..	7,736	8,500	9.8	1,702	1,758	0.9	4.5	4.8	750	..
133	Vengarai ..	7,941	9,000	13.3	1,740	1,822	4.7	4.6	4.9
134	Avanashi ..	7,096	10,300	45.20	1,495	1,632	9.1	4.7	6.3	500	85
135	Tanuku ..	13,558	20,800	53.4	Not furnished.	2,500	8.3	250	967
136	Shiyali ..	14,151	Not furnished.	..	2,535	2,584	2.0	6.0
137	Penukonda ..	5,906	6,000	1.6	1,491	1,518	1.9	4.0	4.0
138	Pedapadu ..	6,080	8,000	31.6	1,116	1,104	*	5.4	7.2	200	230
139	Kosgi ..	10,065	16,000	59.1	2,298	2,471	7.5	4.4	6.5	..	196
140	Manamadura ..	7,346	Not furnished.	..	1,869	2,021	8.1	4.0	..	150	..
141	Dharmapuri ..	19,105	26,000	36.5	4,371	4,581	4.8	4.0	5.0	1,000	..
142	Wallajahbad ..	5,486	7,386	34.7	1,241	1,379	8.6	4.4	5.0	200	..
143	Kamalapuram ..	5,779	7,000	21.2	1,590	1,511	*	4.0	5.0	1,000	..
144	Thiruturaipundi.	8,071	12,010	48.8	..	2,637	4.5	112	..
145	Sulur ..	7,200	8,000	11.1	1,800	2,000	11.1	4.0	4.0	200	..
146	Kanadukathan ..	6,134	5,844	*	1,441	1,583	9.8	4.3	3.7
147	Udangudi ..	13,184	15,988	21.4	3,145	3,853	22.6	4.0	4.0	1,000	..
148	Draksharama ..	5,320	950	1,050	10.5	5.6	..	700	..
149	Baruva ..	8,724	10,632	21.8	2,169	2,112	*	4.0	5.0
150	Kavali ..	11,969	14,000	16.9	2,497	2,687	7.6	5.0	5.0	500	..
151	Kondanur ..	6,899	7,500	8.7	1,850	1,875	1.4	4.0	4.0	280	..
152	Pullapatti ..	11,262	12,632	12.1	3,048	2,333	*	3.7	5.4	60	..
153	Parvathipuram ..	19,456	21,500	10.5	4,496	4,840	7.6	5.0	5.0	455	..
154	Vedasandur ..	3,592	3,670	2.2	871	858	..	4.1	5.0
155	Tirukoyilur ..	14,800	16,000	8.1	2,607	2,860	9.7	5.7	5.6	100	..
156	Tiruchendur	13,000	4,000	3.3	400	..
157	Harur ..	5,286	7,500	41.9	895	1,050	17.3	5.9	7.1	..	200
158	Rameswaram ..	5,774	5,774	..	1,619	1,549	*	4.0	4.0
159	Pummaru ..	7,696	8,917	15.9	1,777	1,800	1.3	4.0	5.0	200	..
160	Arantangi ..	5,610	5,610	..	1,670	1,711	2.4	3.4	3.3	1,000	..
161	Sivagiri	18,247	..	4,252	4,889	15.0	..	4.0	375	..
162	Allur (Nellore district).	9,649	10,574	9.5	1,839	1,843	0.02	5.2	5.8	100	..
163	Dowluishwaram ..	11,383	16,248	42.8	2,378	2,575	8.2	4.8	6.3	..	133
164	Palmaner ..	5,293	6,000	13.3	1,340	1,415	5.5	4.0	4.0
165	Nattarasankottai.	5,925	5,925	..	1,186	1,284	8.2	5.0	5.0	Not available.	..
166	Villivakkem ..	8,881	14,000	52.4	800	853	6.6	11.2	16.4	100	1,481
167	Badagara ..	17,380	17,560	1.0	1,460	1,510	3.4	11.9	11.6	..	1,417
168	Alur ..	7,348	10,000	36.1	1,673	1,722	2.9	4.4	5.8
169	Bhuvanagiri ..	8,822	12,000	36.0	1,800	2,000	11.1	4.9	6.0	150	..
170	Undi ..	6,395	9,400	47.3	1,000	1,013	1.3	6.4	9.4	..	554
171	Ayyampet ..	7,546	8,465	12.2	..	1,849	4.6	Nil.	..
172	Cumbum ..	8,453	10,025	18.6	2,106	2,357	11.9	4.0	4.0	125	..
173	Manachanallur ..	6,584	8,000	21.5	1,586	1,800	13.4	4.0	5.0
174	Kattumannarkoil.	9,855	2,144	5.0
175	Alangayam ..	7,003	7,226	3.1	1,407	1,452	3.2	5.0	5.0	194	..
176	Tirutani ..	7,193	10,000	39.0	1,481	1,572	6.1	4.8	6.4	..	95
177	Razole ..	5,896	7,800	32.3	914	1,138	24.3	6.4	6.9	400	165
178	Kattuputtur ..	7,110	10,000	40.6	1,200	1,300	8.3	5.9	7.7	510	366
179	Pattukottai ..	12,709	15,445	21.5	2,367	3,456	46.0	4.3	4.5	235	..
180	Watrap ..	9,411	9,411	2,707	3.5	300	..
181	Mummidivaram ..	9,967	12,772	28.0	1,984	2,204	11.1	5.0	5.8	1,320	..
182	Thottavallur ..	8,268	8,268	..	2,082	1,933	*	5.0	4.3
		1,879,969	2,322,789		375,269	452,103				67,696	33,050

* Number of houses in 1946 is less than the number in 1941.

APPENDIX VII.

(Vide paragraph 105.)

Industrial Establishments—Housing.

Name of the concern.	Income group Rs. 0—50.	Number of houses provided.	Income group Rs. 51—100.	Number of houses provided.	Income group Rs. 101—200.	Number of houses provided.	Income group Rs. 201—500.	Number of houses provided.	Income group Rs. 501—1,000.	Number of houses provided.	Income group over Rs. 1,000.	Number of houses provided.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1. Saroja Mills, Singanailur.	85	..	440	..	160	..	6
2. Pullicar Mills, Tiruchengode.	352
3. Palani Andavar Mills, Udamalpet.	146	..	730	..	81
4. Jayalakshmi Mills, Singanallur.	90	..	315	..	53	..	3
5. Sri Rajendra Mills, Salem.	504	..	665	51	44
6. Lotus Mills, Podanur.	590	..	156	46
7. Janardhana Mills, Singanallur.	110	..	611	..	248
8. Madura Mills, Madura.	4	..	54	..	13,617	708	41	..	6
9. Combodia Mills, Ltd., Ondiputhur.	2,250	..	12	..	3
10. Lakshmi Mills, Coimbatore.	175	..	1357	..	198	..	14
11. Janakiram Mills, Ltd., Rajapalayam.	70	11	60	..	17	..	1
12. C. B. E. Kamala Mills, Singanallur.	526	..	25	72
13. Cochin Port ..	397	2	217	..	75	..	19	..	7	..	2	..
14. Dhanalakshmi Mills, Tiruppur.	127	..	1,133	..	308
15. Loyal Textiles Mills, Koilpatti.	769	71	503	97	62	45	5	4	1	1	1	2
16. Kasthuri Mills, Singanallur.	94	..	531	..	55	..	1
17. Government Silk Filatures, Kollagal.	767	40	10
18. Aaron Spinning and Weaving Mills.	351	25	289	..	106	..	1
19. Tuticorin Port Trust.	12	..	82	..	33	..	7	..	3	..	2	..
20. Mettur Industries, Ltd., Mettur.	15	..	778	45	1,407	663	8	8
21. Kumaran Mills, Pudukalayam.	49	..	263	..	19	5	1
22. Sarvanarayana Spinning and Weaving Mills, Pandalapa, East Godavari district.	37	..	184	27	4	2
23. Ramalingachoudambika Mills, Tiruppur.	29	..	556	..	75
24. Vizagapatam Port Trust.	1,659	..	357	3	134	2	40	..	25	6	5	4
25. Buckingham and Carnatic Mills, Madras.	13,203	441	1,351	37	8
26. Andhra Cement Company, Bezwada.	100	..	60	..	60	..	20	..	4
27. Kaleswaran Mills, Coimbatore.	946	..	1,818	21	618	19	13
28. Binny and Company, Madras.	54	..	1,115	..	53
29. Madras Port Trust ..	1,261	19	1,920	4	846	1	5
30. P. Orr & Sons, Madras.	189	..	60	..	42	..	10	..	1
Total ..	10,762	168	14,126	320	32,739	1,932	1,599	49	55	7	10	5

APPENDIX VIII.

(Vide paragraph 119.)

Price list of doors and window fittings.

Name of article.	Name of stockists and prices quoted by them.														
	Associated Trading Corporation, Limited, Mount Road, Madras.			Husain Sha and Sons, Trichinopoly.			P. V. Radhakrishna Chetty, Madras.			T. R. Malik and Company, Bangalore City.			V. Kanakiah Chetty and Company, Madras.		
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
Holdfasts (iron handles) (per doz.).	..			7	8	0		
Hinges, 5" (per dozen pair) ..	7	11	0	26	8	0	24	0	0	22	0	0	9	12	0
Hinges, 4" (per dozen pair) ..	5	8	0	10	12	0	11	0	0	11	0	0	6	12	0
Hinges, 3" (per dozen pair) ..	2	12	0	9	0	0	9	0	0	9	0	0	4	8	0
Tower bolts, 6" (per dozen)			4	14	0	5	4	0	0 15 0 { per foot.			0 14 0 { per foot.		
Tower bolts, 9" (per dozen)			8	4	0	7	14	0						
Tower bolts, 12" (per dozen)			10	14	0	10	8	0						
Pad bolts (locking arrangement) (per dozen).			11	4	0	..			1	3	0
							or						(per foot).		
							0	14	0						
							per foot.								
Cross bolts (locking 8", 9" plain type, (per dozen).	..			14	0	0		
Superior G.I. ring bolts (K. V. N., 2") each.		
Ringlocks (each)			15	0	0	8	0	0	..		
Hooks and eyes, 6" (per dozen).	..			5	0	0	3	0	0	2	0	0	..		
Hooks and eyes, 2" (per dozen)	..			2	8	0	1	4	0	0	12	0	..		
Screws, 1½" (per dozen)			0	3	8	0	3	6	0	3	4	0	2	11
Screws, 1" (per dozen)			0	3	0	0	3	6	0	3	4	0	3	8

APPENDIX IX.

(Vide paragraph 119.)

Fittings required for one dwelling and its cost.

The type-design of a labourer's dwelling prepared by the Madras Corporation has been taken as an illustration for assessing the estimates of building fittings. It comprises two dwelling units, one ground floor and the other first floor. It consists of—

	Ground floor.					First floor.				
1 Bed room	1	1
2 Living room	1	1
3 Staircase room (common)	1	1
4 Bath room	1	1
5 Kitchen	1	1
6 Lavatory	1	1
7 Kudam or veranda (rear)	1	1
8 Veranda (front)	1	1

The number of doors as found in the type-design are as follows :—

	Ground Floor.					First Floor.				
Bed room	2	} Double leaf.	3	} Double leaf.	1
Living room	2		2		1
Staircase room	1		1		1
Bath room	1	} Single leaf.	1	} Single leaf.	1
Kitchen	1		1		1
Lavatory	1		1		1

According to the Madras Detailed Standard Specifications, the following fittings and furniture are required for doors (3' 6" × 7')—

1. Iron holdfasts 2" × ½" × 9" long fixed with 3" nettle fold screws—6 numbers—12 screws to be added to total section.

2. Butt hinges—6 numbers—4" × 3" deep—screws 1" × No. 8, 4 doz.

APPENDIX IX—cont.

Fittings required for one dwelling and its cost—cont.

3. Tower bolts at top—2 Nos. 12" long—screws : 16 Nos. 1" × No. 8.

4. Tower bolts at bottom—2 Nos. 6" long—screws : 16 Nos. 1" × No. 8.

The fittings and furniture required for the above are—

	Ground floor.	First floor.
1 Iron holdfasts, 6 Nos.	48	54
2 Butt hinges, 6 Nos.	39	45
3 Tower bolts top, 2 Nos.	13	15
4 Tower bolts, bottom, 2 Nos.	13	15
5 Screws, 3"	8 doz.	9 doz.
Do. 1" × No. 8	182 "	220 "

Estimated costs per house.

	Ground floor.			First floor.			Total.		
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
1 Iron holdfasts 48 (G.F.) plus 54 (F.F.) at As. 8 each	24	0	0	27	0	0	51	0	0
2 Butt hinges 39 (G.F.) plus 45 (F.F.) at Rs. 2-4-0 per pair	43	14	0	50	10	0	94	8	0
3 Tower bolts top 13 (G.F.) plus 15 (F.F.) quality No. 2030 at Rs. 1-12-0 per foot	22	12	0	26	4	0	49	0	0
4 Tower bolts bottom foot at 13 (G.F.) plus 15 (F.F.) at Rs. 1-12-0 per foot	11	6	0	13	2	0	24	8	0
5 Screws 8 dozen (G.F.) plus 9 dozen (F.F.) at Rs. 4-8-0 per gross	3	0	0	3	6	0	6	6	0
6 Screws No. 8—182 dozens (G.F.) plus 220 (F.F.) at Rs. 1-12-0 per gross	17	1	0	20	10	0	37	11	0
Total	122	1	0	141	0	0	263	1	0

Windows.

The number of windows required as per the design are—

	Ground floor.	First floor.	Ventilators for ground floor and first floor.
Bed room	2	2	..
Living room	2	2	..
Stair case van	1
Bath room	1	1
Kitchen	1
Lavatory	1	1
	6	6	2

Assuming that the window measures 3' 6" × 4' 0", the following fittings are required :—

	Screws.
1 Iron holdfasts, 2" × 1" × 9", 4 Nos.	8 Nos. 1½" × No. 9.
2 Butt hinges, 3" × 3", 4 Nos.	2 doz.
3 Tower bolts, 2 Nos. 6" long	8 Nos. } 1" × No. 8.
4 Tower bolts bottom, 2 Nos. 6" long	8 Nos. }

The fittings and furniture requires—

Iron hold fasts	24	24	32 doz.—1½" × No. 9.
Butt hinges	24	24	96 doz.
Tower bolts (top)	12	12	16 "
Tower bolts (bottom)	12	12	16 "
			128 doz.—1" × No. 8.

Estimated cost.

	Ground floor.			First floor.			Total.		
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
Iron holdfasts 24 plus 24 at As. 8 each	12	0	0	12	0	0	24	0	0
Butt hinges 24 plus 24 at Rs. 2-4-0 per pair	27	0	0	27	0	0	54	0	0
Tower bolts 12 plus 12 at Rs. 1-12-0 per foot	21	0	0	21	0	0	42	0	0
Tower bolts bottom 12 plus 12 at Rs. 1-12-0 per foot	10	8	0	10	8	0	21	0	0
Screws 1½" No. 9—16 doz. plus 16 doz. at Rs. 1-4-0 per gross	1	11	0	1	11	0	3	6	0
Screws No. 8—64 doz. plus 64 doz. at Rs. 1-2-0 per gross	6	0	0	6	0	0	12	0	0
Windows	78	3	0	78	3	0	156	6	0
Door	122	1	0	141	0	0	263	1	0
Total	200	4	0	219	3	0	419	7	0

The above are pre-war rates and the estimates are for one house with two floors.

The minimum cost of these fittings for a dwelling unit will thus be about Rs. 200.

For a five-year Housing Project for the Madras City detailed in Appendix XII, we will require Rs. 21,000 × 200 = 42,00,000 or Rs. 42 lakhs worth of fittings per year.

Similarly for a Housing Project for the urban and semi-urban areas detailed in Appendix XII we will require fittings worth about another Rs. 42 lakhs per year.

Thus in all nearly Rs. one crore worth of fittings will be necessary annually for a Housing Project for the urban and semi-urban areas in the whole Province on a five-year basis.

APPENDIX X.

(Vide paragraph 121.)

Statement of Capital and Return on investment on railway transport for cement factories.

I. MADUKKARAI FACTORY.

The Madukkarai factory would require 278 open wagons and 275 closed wagons to enable the factory to keep up peak production.

The costs of a closed wagon and an open wagon are estimated at Rs. 30,000 and Rs. 20,000 respectively. The capital cost would work out to Rs. 20,000 \times 278 plus Rs. 30,000 \times 275 = Rs. 1,38,10,000. The receipts against the capital expenditure are estimated as follows:—

(1) *Coal*.—The factory would require 4,500 tons of coal per month. The total tons of coal per year would come to 54,000 tons. Freight charges from Singareni, Talchur and Jharia to Madukkarai are Rs. 14-10-1, Rs. 16-11-11, and Rs. 18-4-11, respectively. Assuming that the supply is distributed as 2 : 1 : 2 among the three collieries the average freight works to Rs. 16-8-5. Of this 60 per cent is for the haulage and 40 per cent hire charges of a wagon. The 40 per cent share makes up Rs. 6-9-9. The total receipt against the capital under transport of coal = 54,000 \times Rs. 6-9-9 which is equal to Rs. 3,56,906-4-0.

(2) *Cement*.—The optimum production is 15,000 tons per month or 180,000 tons per annum. The freight for cement per maund from Madukkarai to Madras is 10 annas 3 pies plus supplemental charges of 12½ per cent. The distribution has to be made to places up to Mangalore, i.e., 250 miles from Madukkarai and up to Tinnevely which is 350 miles from Madukkarai. The average distance of distribution may therefore be taken as 2/3 that of Madras to Madukkarai in the minimum. The average freight per ton will therefore be 10 annas 3 pies \times 27 \times ⅔ plus 12½ per cent supplemental charges, i.e., Rs. 12-15-7. Forty per cent share would be Rs. 5-3-0. The total receipt against the capital under transport of cement would be Rs. 1,80,000 \times Rs. 5-3-0 which is equal to Rs. 9,33,750.

(3) *Gypsum*.—The quantity of gypsum required by the factory is 600 tons per month or 7,200 tons per annum. Freight for gypsum from Trichinopoly to Madukkarai is 6 annas per maund plus 12½ per cent supplemental charge, i.e., Rs. 11-6-3 per ton. Forty per cent share makes up Rs. 4-8-11. The receipts under transport of gypsum will be 7,200 \times Rs. 4-8-11 = Rs. 32,812-8-0.

(4) *Jute*.—The total quantity of jute bags required by the factory is 300 tons per month or 3,600 tons per annum. Freight for jute bags from Shalimar (Calcutta) to Madukkarai is Rs. 2-15-1 per maund plus 12½ per cent supplemental charge, i.e., Rs. 89-6-2 per ton. Forty per cent share makes up Rs. 35-12-1. The receipts under transport of jute will be Rs. 35-12-1 \times 3,600 = Rs. 1,28,718-12-0.

Total capital cost—Rs. 1,38,10,000 or 138.1 lakhs.

Total receipts against capital expenditure of Rs. 1,38,10,000—(3.6 + 9.3 + 0.3 + 1.3) = 14.5 lakhs.

Deduct 10 per cent of freight for repairs and renewals—3.63 lakhs.

Net return—10.87 lakhs.

Percentage on capital—(10.87 \div 138) = 7.8 per cent.

Deduct interest on capital at 3 per cent—The remaining 4.8 will be adequate to wipe out the capital in 20 years—the life of a wagon being taken at 30 years.

II. KISTNA CEMENT WORKS, MANGALAGIRI.

Similarly the Kistna Cement Works would require 100 closed wagons and 108 open wagons. The costs of the closed wagons and open wagons are estimated at Rs. 30,000 and Rs. 20,000 respectively. The capital cost would work out to Rs. 20,000 \times 108 plus Rs. 30,000 \times 100 = Rs. 51,60,000.

The receipts of the capital expenditure are estimated as follows:—

(1) *Limestone*.—The factory requires 25,600 tons of lime per month. The freight for lime per maund from Sattenapalle to Mangalagiri is 1 anna 5 pies per maund plus 12½ per cent supplemental charge—Rs. 2-11-0 per ton, 40 per cent share of the freight equals Rs. 1-1-2. The receipts per year under transport of limestone would be Rs. 1-1-2 \times 25,600 \times 12 = Rs. 3,29,600.

(2) *Coal*.—The factory would require 175 wagons of coal per month, i.e., 3,500 tons. The freight from Singareni, Talchur and Jharia to Mangalagiri are Rs. 3-13-10, Rs. 8-5-0 and Rs. 10 per ton respectively. Assuming that the supply is distributed as 2 : 1 : 2, the average freight works to Rs. 7-3-4. Forty per cent share will be Rs. 2-14-3. The total receipt against the capital under transport of coal would be Rs. 2-14-3 \times 3,500 \times 12 = Rs. 1,21,180.

(3) *Gypsum*.—The factory would require 300 tons of gypsum per month. Freight from Trichinopoly to Mangalagiri is Rs. 1-1-3 per maund plus 12½ per cent supplemental charges, i.e., Rs. 32-12-0. Forty per cent of this comes to Rs. 13-1-7. The receipts under transport of gypsum would be Rs. 13-1-7 \times 300 \times 12 = Rs. 47,156-4-0.

APPENDIX X—cont.

Statement of Capital and Return on investment on railway transport for cement factories—cont.

(4) *Jute bags*.—The factory requires 160 tons of jute bags per month. Freight from Shalimar (Calcutta) to Mangalagiri for jute bags per maund is Rs. 1-13-0 plus a supplemental charge of $12\frac{1}{2}$ per cent, i.e., Rs. 55-0-11 per ton. Forty per cent share equals Rs. 22-0-4 per ton. Factory requires 1,920 tons of jute bags annually. The total receipt under transport of jute bags ($1,920 \times \text{Rs. } 22-0-4$) equals Rs. 42,280.

(5) *Cement*.—Freight for cement per maund from Mangalagiri to Madras is 9 annas 4 pies plus $12\frac{1}{2}$ per cent supplemental charges. The average distance of distribution may be taken as $\frac{2}{3}$ in the minimum. The average freight per ton would be 9 annas 4 pies $\times 27 \times \frac{2}{3}$ plus $12\frac{1}{2}$ per cent supplemental charge equals to Rs. 11-13-0. Forty per cent of the same would amount to Rs. 4-11-7. The output of the factory is 96,000 tons per year. The total receipts against the capital under transport of cement would be Rs. 4-11-7 $\times 96,000$ equals to Rs. 4,53,500.

Total capital cost, Rs. 51.6 lakhs.

Total receipts against capital expenditure (Rs. 3.30 + 1.21 + 0.47 + 0.42 + 4.54) = 9.94 lakhs.

Deduct 10 per cent of freight for repairs and renewals, Rs. 2.49 lakhs.

Net return, Rs. 7.45 lakhs.

Percentage on capital, Rs. 7.45 \div 51.6 $\times 100$ = 14.4 per cent.

Deduct interest on capital at 3 per cent and the remaining 11.4 per cent will be adequate to wipe out the capital in 10 years, the life of a wagon being 30 years.

III. ANDHRA CEMENT COMPANY, BEZWADA.

Similarly the Andhra Cement Company would require 32 open wagons and 30 closed wagons. The capital cost would work out to Rs. 20,000 $\times 32$ plus Rs. 30,000 $\times 30$ = Rs. 15,40,000. The receipts against the capital expenditure are estimated as follows:—

(1) *Coal*.—Singareni to Bezwada Rs. 3-4-0, Talchur to Bezwada Rs. 7-12-0, and Jharia to Bezwada Rs. 9-7-0. Assuming that the supply is distributed as 2 : 1 : 2 among the three collieries the average freight works to Rs. 6-13-2. Forty per cent share would come to Rs. 2-11-8. The factory would require 9,000 tons of coal. The total receipt against the would be capital Rs. 2-11-8 $\times 9,000$ = Rs. 24,562-8-0.

(2) *Cement*.—The total production of cement is 2,500 tons per month or 30,000 tons per annum. The freight for cement per maund from Bezwada to Madras is 8 annas 7 pies per maund plus supplemental charge of $12\frac{1}{2}$ per cent. The average distance of the places for distribution may be taken as two-thirds the distribution between Madras and Bezwada in the minimum. The average freight per ton would be 8 annas 7 pies $\times 27 \times \frac{2}{3}$ plus $12\frac{1}{2}$ per cent = Rs. 10-13-10. Forty per cent share equals to Rs. 4-5-6. The total receipt against the capital would be Rs. 4-5-6 $\times 30,000$ equals to Rs. 1,30,312-8-0.

(3) *Gypsum*.—The factory would require 1,200 tons of gypsum per year. Freight from Trichinopoly to Bezwada is Rs. 1-1-5 per maund plus $12\frac{1}{2}$ per cent supplemental charges, i.e., Rs. 33-1-0 per ton. Forty per cent share would come to Rs. 13-3-7. The total receipt against the capital under this head would be Rs. 13-3-7 \times Rs. 1,200 = Rs. 15,868-12-0.

(4) *Jute*.—The factory would require 600 tons of jute. Freight from Shalimar to Bezwada is Rs. 1-12-0 per maund plus $12\frac{1}{2}$ per cent supplemental charge. The freight per ton would be (Rs. 1-12-0 plus $\frac{1}{8}$ of Rs. 1-12-0) $\times 27$ or Rs. 53-2-6. Forty per cent share would be Rs. 21-4-2. The total receipt against the capital would be Rs. 21-4-2 $\times 600$ = Rs. 12,756-4-0.

Total capital cost Rs. 15.4 lakhs.

Total receipt against the capital 2456 plus 13031 plus 1587 plus 12756 = 1,83,496 = Rs. 1.83 lakhs.

Deduct 10 per cent of freight for repairs and renewals. Rs. 1.83 $\div 4$ = 0.46 lakhs.

Net return Rs. 1.37 lakhs.

Percentage on capital (1.37 \div 15.4) $\times 100$ = 8.9 per cent. Deducting 3 per cent on capital the remaining 5.9 would be adequate to wipe off the capital in 20 years, the life of a wagon being taken at 30 years.

IV. DALMIA CEMENT, LIMITED.

The Dalmia Cement factory would require 102 open wagons and 100 closed wagons to keep up production to the optimum which is estimated on the basis of the figures worked out for Madukkarai. Taking the cost of an open wagon at Rs. 20,000 and a closed wagon at Rs. 30,000, the capital cost would amount to Rs. 20,000 $\times 102$ plus 30,000 $\times 100$ = Rs. 50,40,000.

1. *Coal*.—The company may require 21,000 tons of coal per year. Taking the figures for Madukkarai as the basis for working out the freight for this factory and assuming that the supply is distributed as 2 : 1 : 2 the average freight per ton works out to Rs. 16-8-5. Forty per cent share will be Rs. 6-9-9 per ton. The total receipts against the capital would be Rs. 6-9-9 $\times 21,000$ = Rs. 1,38,796-14-0.

2. *Cement*.—The optimum production is 70,000 tons per annum. The freight per maund is 9 annas 4 pies plus $12\frac{1}{2}$ per cent supplemental charge. The average distance of distribution may be taken as $\frac{2}{3}$ of that between Madras and Dalmiapuram in the minimum. The average freight per ton would be Rs. 0-9-4 $\times 27 \times \frac{2}{3}$ plus $12\frac{1}{2}$ per cent = Rs. 11-13-0. 40 per cent share would amount to Rs. 4-11-7. The total receipt against the capital would be Rs. 4-11-7 $\times 70,000$ = Rs. 3,30,677-1-4.

3. *Jute*.—The freight for jute may be taken as Rs. 2-15-0 per maund plus 12½ per cent supplemental charges. The factory would require 1,400 tons of jute per year. The total receipt at 40 per cent share would be Rs. 36-11-1 × 1,400 = Rs. 59,969-12-8.

Total capital cost, Rs. 44.7 lakhs.

Total receipts of 40 per cent share 1.388 + 3.307 + 0.50 = 5.195 lakhs = 5.2 lakhs.

Deduct 10 per cent of freight 5.2 × 1/10 5/2 = 1.3 lakhs.

Net return, 3.9.

Percentage on capital 3.9 — 50.4 × 100 = 7.7 per cent.

If 3 per cent be allowed as interest on capital, the balance of 4.7 per cent will be adequate to wipe out the capital in the course of 21 years, the life of the wagon being 30 years.

Consolidated statement.

	Capital. RS.	Return. RS.
	LAKHS.	LAKHS.
1 Madukkarai	138.1	10.87
2 Kistna (Mangalagiri)	51.6	7.45
3 Andhra (Bezwada)	15.4	1.37
4 Dalmiapuram (Trichinopoly)	50.4	3.90
	255.5 or 2.56 crores.	23.59

The return will be over 9 per cent on the capital invested.

APPENDIX XI.

(*Vide* paragraph 129.)

Requirements of brick manufacture.

1 Number of houses to be constructed in the City per year— For general public on a 5-year programme	105,000/5 = 21,000	
For railway and other workers on a 20-year programme	65,000/20 = 3,250	24,250
2 Number of bricks required for construction of 24,250 houses at 30,000 bricks per house		72.75 crores.
3 Number of bricks required for the (middle and upper class houses) con- structed by the Building Trading Corporations, etc. (taken at the present level of production)	10	„
4 Total number of bricks required per year for City	82.75	„
5 Present output	10	„
6 Number to be made available by stepping up production	72.75	„
7 Coal required for 83 crores of bricks at 20 tons per one lakh of bricks ..	166,000 tons.	
8 Number of open wagon loads to carry 1.66 lakhs of tons at 20 tons per wagon	8,300 wagon loads.	
9 Number of open wagons required for 8,300 wagon loads allowing 15 round trips per wagon per year	553 wagons.	
10 Capital cost of 553 wagons at 20,000 per wagon	110.6 lakhs.	
11 Average cost of transport per ton of coal from places of production to Madras	Rs. 9-2-6	
(Rs. 14-8-4 + Rs. 9-6-0 + Rs. 21-14-0)		
5		
12 Hire charges per ton (taking 40 per cent of the total transport charge), i.e., Rs. 9-2-6 × 2/5	Rs. 3-10-7	
13 Hire charges for 166,000 tons (Rs. 3-10-7 × 166,000)	6.08 lakhs.	
14 Depreciation at 10 per cent of the total charges	1.52	„
	Balance ..	4.56 „

which represents a return on capital at 4.1 per cent.

APPENDIX XII.

[Vide paragraph 144.]

(1)

Five-years' Scheme for Madras City General Public.

1	Number of houses required	165,000
2	Deduct number of houses to be provided for workers—	
	Railway workers	6,000
	Government servants	15,000
	Industrial workers	30,000
	Corporation employees	14,000
		<hr/> 65,000
3	Balance	100,000
4	Add 5 per cent increase for the next five years	5,000
5	Total number of houses to be constructed	105,000
6	Capital cost required for 1.05 lakhs of houses at Rs. 5,000 per house— (1.05 × 5,000) lakhs	Rs. 52.5 crores.
7	Yield by way of rent contribution of the occupants at the rate of Rs. 8-4-0 per mensem or Rs. 99 per house per annum for 1.05 lakhs of houses (1.05 lakhs × 99)	Rs. 1.04 „
8	Capital cost justifiable on rent contribution by the occupants (capitalized at 6 per cent)	Rs. 17.3 „
9	Capital cost to be met by the State in five years (52.5 — 17.3)	Rs. 35.2 „
10	Cost to be met by the State per year	Rs. 7.04 or 7 crores.

(2)

Five-years' Scheme for the Urban and Semi-Urban Areas—General Public.

1	Number of houses required	165,000
2	Deduct number for municipal or other employees	20,000
	Do. industrial workers and others	45,000
		<hr/> 65,000
3	Balance number of houses	100,000
4	Add 5 per cent increase for the next five years	5,000
5	Total number of houses to be constructed	105,000
6	Capital cost to construct 1.05 lakhs of houses at Rs. 3,000 per house (1.05 × 3,000) lakhs plus cost of providing essential amenities	Rs. 31.5 crores plus 6 crores = 37.5 crores.
7	Yield (contribution by the occupants) at Rs. 8-4-0 per house per mensem or Rs. 99 per annum for 1.05 lakhs of houses (1.05 × 99)	Rs. 1.04 „
8	Yield capitalized at 6 per cent (1.04 ÷ 5 per cent)	Rs. 17.3 „
9	Capital cost to be met by the State in five years (37.5 — 17.3)	Rs. 20.2 „
10	Capital cost to Government per year	Rs. 4.04 or 4 crores.

(3)

Twenty-years' Scheme for Rural Housing—General Public.

1	Number of houses required—	
	Rural population 4.2 crores requiring proper housing $4.2/2 = 2.1$ crores.	
	20 per cent increase for twenty years in population42 crore.
	Total	<hr/> 2.52 crores.

	Housing required— $2.52/6 = .42$ crore or 42 lakhs	42 lakhs.
2	Capital cost for 42 lakhs of houses at Rs. 2,000 per house (42 lakhs × 2,000) plus cost of essential amenities (Rs. 140.0 crores).	
	Rs. 840 crores plus 140 crores	Rs. 980 crores.
3	Yield expected at the rate of Rs. 5 per mensem or Rs. 60 per annum per house on 42 lakhs of houses	Rs. 25.2 „
4	Capital cost justified on the rent yield of the houses (capitalized at 6 per cent).	Rs. 420 „
5	Balance of capital cost to be met by the State (980—420) crores in twenty years.	Rs. 560 „
6	Capital cost to be met annually by the State	Rs. 28 „

APPENDIX XII—cont.

(4)

Twenty-years' Housing Scheme for Government Employees.

Income group.	M.H.R.A. or H.A. and rate.*	Number of employees in the		Cost incurred per mensem.	Cost per annum.
		Madras City.	Mufassal.		
(1)	(2)	(3)	(4)	(5)	(6)
				RS.	RS.
(1) Above Rs. 120 p.m. ..	M.H.R.A. at Rs. 25 p.m. ..	1,300	..	32,500	3,90,000
(2) Rs. 81 to 120 p.m. ..	M.H.R.A. at Rs. 15 p.m. ..	3,000	..	45,000	5,40,000
(3) Rs. 41 to 80 p.m. ..	H.A. at Rs. 7 p.m. ..	3,500	..	24,500	2,94,000
	H.A. at Rs. 5 p.m.	30,000	1,50,000	18,00,000
(4) Less than Rs. 40 ..	H.A. at Rs. 5 p.m. ..	4,500	..	22,500	2,70,000
	H.A. at Rs. 3 p.m.	70,000	2,10,000	25,20,000
	Total ..	12,300	100,000	4,84,500	58,14,000 or 58 lakhs.

* M.H.R.A. = Madras House Rent Allowance.

H.A. = House Allowance.

- (i) Capital cost at Rs. 5,000 per house in the Madras City and at Rs. 3,000 per house in the mufassal ($12,300 \times 5,000$ plus $100,00 \times 3,000$) .. 36,15,00,000 or 36.15 crores.
- (ii) Capital expenditure justified on the basis of rent allowance paid by Government (capitalized at 6 per cent 58.14 lakhs/6 per cent) .. 9,69,00,000 or 9.69 crores.
- (iii) House rent to be shared by the employees themselves 10 per cent of the emoluments of Government servants .. 57,03,600 or 57.0 lakhs.
- 16 × 1,300 .. 20,800 Rs. 160 is taken as the average for income groups Rs. 120 and above.
- 10 × 3,000 .. 30,000 Rs. 100 is taken as the average for income groups Rs. 80 to 120.
- 6 × 3,500 .. 21,000 } Rs. 60 is taken as the average for income groups between Rs. 40 to 80.
- 6 × 30,000 .. 1,80,000 }
- 3 × 4,500 .. 13,500 } Rs. 30 is taken as the average for income groups below Rs. 40.
- 3 × 70,000 .. 2,10,000 }
- $4,75,300 \times 12 = 57,03,600$ or 57 lakhs.
- (iv) Capital cost that could be set off against the rent recoverable from the Government servants (capitalized at 6 per cent, i.e., $58.4 \div 6$ per cent) .. 9,50,60,000 or 9.5 crores.
- (v) Net cost to Government by undertaking a housing scheme to be spread over 20 years .. 36.15 — (9.69 plus 9.5) crores = 16.96 crores.
- (vi) Additional cost to Government per year $17.06 \div 20$.. 848 crores or .85 crores.

(5-A)

Twenty-years' Housing Scheme for Industrial Workers.

- Number of workers employed in large scale industrial establishments coming under the operation of the Indian Factories Act (Seasonal 0.3 lakhs plus non-seasonal 2.2 lakhs) .. 2.5 lakhs.
- Capital cost of providing houses at Rs. 3,000 per house per worker (i.e., $2.5 \text{ lakhs} \times 3,000$) .. 75 crores.
- Contributions by Industries at (2 plus 1) per worker and by the employer at Rs. 8-4-0 (The income of a worker is taken to range from Rs. 55 to 110 and the average of 10 per cent of the pay, i.e., Rs. 8-4-0 is adopted), i.e., at Rs. 11-4-0 per worker per mensem or Rs. 135 per annum for 2.5 lakhs of workers— 2.5×135 lakhs .. 337.5 lakhs.
- Contributions by the Industries and the employees capitalized at 6 per cent (i.e., $337.5 \times 100/6$ lakhs) .. 56 crores.
- Balance of capital cost to be shared by the State in 20 years ($75 - 56$) = 19 .. 19 crores.
- Cost to be borne by the Provincial and Central Governments per year .. 1 crore.
- Cost to each of the Governments, Provincial and Central per annum .. 5 crores.

APPENDIX XII—cont.

(5-B)

Twenty-years' Housing Scheme for Industrial Workers.

(Alternative Scheme.)

1	Number of workers employed in large-scale industrial establishments coming under the operation of the Indian Factories Act	2.5 lakhs.
2	Capital cost at Rs. 3,000 per house per worker (2.5 lakhs \times 3,000)	75 crores.
3	Contribution by the workers at Rs. 8-4-0 per worker per mensem or at Rs. 99 per annum per worker for 2.5 lakhs of workers (2.5 \times 99 lakhs) ..	247.5 lakhs.
4	Capital cost justified on the contribution paid by the employees (capitalized at 6 per cent)	41.3 crores.
5	Balance of capital cost to be shared in 20 years by the Industries, Provincial and Central Governments (75 — 41.3 crores)	34 crores. 34 crores.
6	Cost to be shared in one year	1.7 crores.
	Cost to each party, i.e., Provincial Government, Central Government and the Industry	6 crores.



APPENDIX XIII.

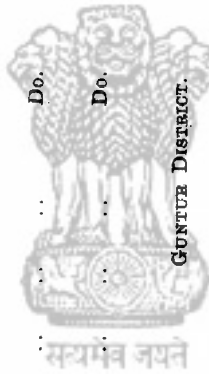
(Vide paragraph 196.)

Statement showing sites selected for housing schemes in municipalities and major panchayats by Housing Committees.

(1) Serial number and name of the panchayat board or municipality.	(2) Extent of site selected for housing.	(3) Whether it is Government, and if so, whether it can be alienated free of cost.	(4) If not alienated free of cost, whether it can be sold for the scheme? If so, at what cost?	(5) If private, whether it can be purchased by private negotiations and if so, at what price?	(6) If not secured by private negotiations, whether it can be acquired under Land Acquisition Act and if so, probable cost.
WEST GODAVARI DISTRICT.					
1 Bhimavaram Panchayat Board.	ACS. 26-74	No	Does not arise	Cannot be secured by private negotiations.	Can be acquired under Land Acquisition Act at Rs. 4,000 per acre.
2 Tadepalligudem Panchayat Board.	20-00	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 1,500 per acre.
3 Polavaram Town. (No panchayat board, being an Agency area.)	20-00 (inam lands).	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 2,100 per acre.
4 Kovur Panchayat Board	20-00	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 2,500 per acre.
5 Nidadavole Panchayat Board	20-00 (zamindari jareyathi lands).	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 2,500 per acre.
6 Tanuku Panchayat Board	20-00 (inam dry).	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 2,500 per acre.
7 Narasapur Panchayat Board	20-00	2-12 acres are Government lands. 1-38 acres, Government panchayat poramboke may be alienated free of cost—rest not Government lands.	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 2,500 per acre.
8 Palacole Municipality	20-33	0-22 acre classified as burial ground poramboke can be alienated free of cost—rest not Government lands.	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 6,000 per acre.
9 Ellore Municipality	21-06	2-01 acres assessed waste dry lands and can be alienated free of cost—rest not Government lands.	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 2,500 per acre.
10 Chintalapudi Panchayat Board.	10-00	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 2,000 per acre.
11 Dharmavaram Panchayat Board.	20-00	S. Nos. 503, 504 and 505 alone Government lands and can be alienated free of cost.	Does not arise	S. Nos. 501/1 and 502/2 are private lands. Not possible to secure.	Can be acquired under Land Acquisition Act at Rs. 1,440 per acre.

ANANTAPUR DISTRICT.

Kalyana rug Panchayat Board.	20-00	No	Do.	Cannot be secured by private negotiations.	Can be acquired under Land Acquisition Act at Rs. 8,000 per acre.
Anantapur Municipality	21-53	1-85 acres are Government lands. Can be alienated free of cost —rest not Government lands.	Do.	19-68 acres are private lands. Not possible to secure.	Can be acquired under Land Acquisition Act at Rs. 2,500 per acre.
14 Pennukonda Panchayat Board	32-57	No	Do.	Yes. May be secured by private negotiations for Rs. 100 per acre.
15 Hindupur Municipality	18-96	No	Do.	Yes. At Rs. 1,000 per acre and partly at Rs. 3,000.
16 Madakasira Panchayat Board	18-06	No	Do.	Cannot be secured by private negotiations.
17 Kadiri Panchayat Board	19-93	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 500 per acre.
18 Gooty Panchayat Board	33-70	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 3,000 per acre.
19 Thimmanchola Panchayat Board.	37-75	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 1,300 per acre.
20 Uravakonda Panchayat Board	20-00	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 1,500 per acre.
21 Tadpatari Municipality	30-00	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 1,000 per acre.
22 Tenali	20-00	No	Does not arise	Cannot be secured by private negotiations.	Can be acquired under Land Acquisition Act at Rs. 5,000 per acre.
23 Repalle	20-00	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 4,000 per acre.
24 Bhattiprolu	20-00	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 2,500 per acre.
25 Sattenapalle	20-00	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 1,200 per acre.
26 Mangalagiri	20-00	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 5,000 per acre.
27 Guntur Municipality	20-00	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 13,915 per acre. (Rs. 2-14-0 per square yard.)
28 Narasaraopet Panchayat Board.	20-00	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 2,000 per acre.



APPENDIX XIII—cont.

Statement showing sites selected for housing schemes in municipalities and major panchayats by Housing Committees—cont.

(1)	(2)	(3)	(4)	(5)	(6)
Serial number and name of the panchayat board or municipality.	Extent of site selected for housing.	Whether it is Government, and if so, whether it can be alienated free of cost.	If not alienated free of cost, whether it can be sold for the scheme? If so, at what cost?	If private, whether it can be purchased by private negotiations and if so, at what price?	If not secured by private negotiations, whether it can be acquired under Land Acquisition Act and if so probable cost.
GUNTUR DISTRICT—cont.					
29 Vinukonda Panchayat Board	ACS. 20-00	No	Does not arise	Cannot be secured by private negotiations.	Can be acquired under Land Acquisition Act at Rs. 2,000 per acre.
30 Chilakalurpet Panchayat Board.	20-00	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 6,000 per acre.
31 Ongole Panchayat Board	20-00	No	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 3,000 per acre.
32 Chirala Panchayat Board	20-00	Partly Government lands. Cannot be alienated free of cost.	Yes, at Rs. 14,520 per acre (Rs. 3 per sq. yard).	Partly private. Not possible.	Can be acquired under Land Acquisition Act at Rs. 4,840 per acre. (Rs. 1 per sq. yard.)
33 Bapatla Panchayat Board	20-00	Do.	Yes, at Rs. 2,500 per acre.	Do.	Can be acquired under Land Acquisition Act at Rs. 2,500 per acre.
34 Ponnur Panchayat Board	20-00	No	Does not arise	Cannot be secured by private negotiations.	Can be acquired under Land Acquisition Act at Rs. 3,000 per acre.
35 Perala Panchayat Board	20-00	Partly Government lands. Cannot be alienated free of cost.	Yes, at Rs. 4,000 per acre.	Partly private. Not possible.	Yes, at Rs. 4,000 per acre.
SOUTH ARCOT DISTRICT.					
36 Tirukkoyilur Panchayat Board	29-83	0-37 acre Government lands and can be alienated free of cost.	Yes, can be secured by private negotiations at Rs. 500 per acre.
37 Ulundurpet Panchayat Board	5-00	Partly Government lands. Cannot be alienated free of cost.	Does not arise	Partly private. Not possible to secure.	Yes, at Rs. 1,000 per acre.
38 Kallakurichi Panchayat Board	21-23	No	Do.	Cannot be secured by private negotiations.	Do.
39 Tinnevely Municipality—Kandiaperi village	23-53	No	Do.	Do.	Yes, at Rs. 500 per acre.
Tinnevely District.					
40 Narasinganallur village	42-44	No	Does not arise	Yes. Can be purchased by private negotiations at Rs. 4,250.
	37-62	No	Do.	Not possible to secure by private negotiations.	Yes, at Rs. 200 per acre.

40 Palamcottah Municipality	38-88	No	Do.	Do.	Yes, at Rs. 4,500 per acre.
Vijayaraghava Mudaliar Choultry.	35-80	No	Do.	Do.	Yes, at Rs. 200 per acre.
Kulavanichapuram	33-86	No	Do.	Do.	Yes, at Rs. 1,000 per acre.
41 Melapalayam Panchayat Board.	45-07	No	Do.	Do.	Yes, at Rs. 1,600 per acre.
42 Tachanallur Panchayat Board	23-00	No	Do.	Do.	Yes, at Rs. 500 per acre.
43 Tenkasi Panchayat Board	29-71	No	Do.	Do.	..
44 Ambasamudram Panchayat Board.	20-00	No	Do.	Do.	..
45 Kallidaikurichi Board	23-79	No	Do.	Do.	..
46 Tiruchendur Board.	51-91	34-44 acres alienated to the district board. May be recovered.	Do.	Do.	..
47 Vikramasingapuram Panchayat Board.	21-14	No	Do.	Do.	..
48 Tuticorin Panchayat Board	119-99	89-01 acres alienated to the municipality may be recovered, and all Government lands can be alienated free of cost.	Do.	Do.	..
49 Eral Panchayat Board	30-91	1-72 acres Government land. Can be alienated free of cost.	Do.	Do.	..
50 Nanguneri Panchayat Board	20-00	Not Government lands.	Do.	Do.	..
51 Koilpatti Panchayat Board	38-00	10 cents alone belong to Government and can be alienated free of cost.	Do.	Do.	..
62-00	62-00	38-72 acres alone belong to Government and can be alienated free of cost.	Do.	Do.	..
142-00	142-00	120 acres alone belong to Government and can be alienated free of cost.	Do.	Do.	..
40-96	40-96	22 acres. Cannot be alienated free of cost.	Do.	Do.	..
52 Sankarankoil Panchayat Board.	40-96	No	Do.	Do.	..
KURNOOL DISTRICT.										
53 Pattikonda Panchayat Board	20-00	No	Does not arise.	Do.	..
54 Dhona Panchayat Board	20-00	No	Do.	Do.	..
55 Koilkuntla Panchayat Board	20-00	No	Do.	Do.	..
56 Allegadda Panchayat Board	20-00	No	Do.	Do.	..

APPENDIX XIII—cont.
Statement showing sites selected for housing schemes in municipalities and major panchayats by the Housing Committee—cont.

Serial number and name of the panchayat board or municipality.	(1)	(2)	(3)	(4)	(5)	(6)
		Extent of site selected for housing.	Whether it is Government, and if so, whether it can be alienated free of cost.	If not alienated free of cost, whether it can be sold for the scheme? If so, at what cost?	If private, whether it can be purchased by private negotiations and if so, at what price?	If not secured by private negotiations, whether it can be acquired under Land Acquisition Act and if so, probable cost.
KURNOOL DISTRICT—cont.						
57 Nandyal Municipality	..	ACS. 31-50	No	Does not arise	22-00 acres can be sold at market rates.	Yes, at Rs. 2,000 to Rs. 2,500 per acre.
58 B. Nandikotkur Panchayat Board.	..	30-76	No	Do.	Do.	Yes, at Rs. 1,000 per acre.
59 Kurnool Municipality	..	48-15	No	Do.	Do.	Yes, at Rs. 1,000 to Rs. 1,500 per acre.
60 Giddalur Panchayat Board	..	20-00	0-36 of 1 a.p.p. Can be alienated free of cost—rest are private lands.	Do.	Do.	Yes, at Rs. 700 per acre.
61 Markepur Panchayat Board	..	20-00	No	Do.	Do.	Yes, at Rs. 500 per acre.
62 Cumbum Panchayat Board	..	20-13	No	Do.	Do.	Yes, at Rs. 1,500 per acre.
63 Ootacamund Municipality	..	67-15	No	Does not arise	Cannot be secured by private negotiations.	The site of 20 acres is under the control of Revenue Forest Department. The Chief Conservator of Forests and Board of Revenue have to be consulted in respect of alienating of forests and revenue lands selected by the Committee. Can be acquired under Land Acquisition Act for Rs. 5,000 per acre.
64 Coonoor Municipality	..	(1) 26-0 acres in Mount Pleasant. (2) 13-74 site near St. Joseph's School near Coonoor, Willington Road. (3) 23-10 site near Vannarpet. 34-47	Government land. Cannot be given free of cost. Do.	Yes, at Rs. 5,000 per acre. Do.	Do.
65 Kotagiri Panchayat Board	..		No	Does not arise	Trust property to be acquired.	Yes, at Rs. 5,000 per acre.
			Grazing ground	No immediate necessity for a housing scheme.		
SOUTH KANARA DISTRICT.						
66 Mangalore Municipality	..	(1) 45-00 (2) 19-61 (3) 15-92 (4) 26-31	Not Government land Do. Do. 25-38 acres Government lands can be alienated free of cost.	Does not arise Do. Do. Do.	Cannot be secured by private negotiations. Do. Do. Do.	Yes, at Rs. 5,000 per acre. Yes, at Rs. 6,000 per acre. Yes, at Rs. 5,000 per acre.

67 Kasaragod Panchayat Board ..	30-30	Not Government lands	..	Do.	..	Do.	Yes, at Rs. 9,000 per acre.
68 Puttur Panchayat Board	S. Nos. 252-3, 267-2 and 298-2 A are Government lands. Cannot be alienated free of cost.	..	Do.	..	Do.	Yes, at Rs. 1,000 per acre
69 Karkal Panchayat Board ..	20-00	Government lands. Can be alienated free of cost.
70 Udipi Municipality ..	40-00	Do.
71 Coondapoor Panchayat Board ..	30-00	Do.
CUDDAPAH DISTRICT.							
72 Rayachoti Panchayat Board ..	25-81	Not Government lands	Though can be secured by private negotiations for Rs. 400 per acre better to acquire to avoid complications of title.	Yes, at Rs. 400 per acre.
73 Proddatur Panchayat Board ..	20-00	Do.	Can be secured by private negotiations.	Yes, at Rs. 600 to Rs. 800 per acre.
74 Rajampet Panchayat Board ..	20-00	A part of land belongs to Government and can be alienated free of cost.	Does not arise	Do.	Yes, at Rs. 1,000 per acre.
75 Cuddapah Municipality ..	180-80	Government lands. Can be alienated free of cost for formation of roads and parks, etc.	If not alienated free of cost, they can be sold at Rs. 500 per acre for B and C class and Rs. 1,500 for A class.	Yes, at Rs. 1,500 per acre for 'A' class and Rs. 500 per acre for 'B' class.	Plots near dwelling houses may have to be acquired.
CHITTOOR DISTRICT.							
76 Masalanapalle Panchayat Board..	20-00	Not Government lands	..	Does not arise	..	May be secured by private negotiations at Rs. 1,500 per acre.	If private negotiations fail, action under Land Acquisition Act to be taken at Rs. 1,500 per acre.
77 Vayalpad Panchayat Board ..	20-00	Do.	..	Do.	..	May be secured by private negotiations at Rs. 1,000 per acre.	If private negotiations fail, action under Land Acquisition Act to be taken at Rs. 1,000 per acre.
78 Tirupathi Municipality ..	24-33	Do.	..	Do.	..	Cannot be possible to secure by private negotiations.	Can be acquired under Land Acquisition Act at Rs. 1,000 to Rs. 1,500 per acre.
79 Pakala Panchayat Board ..	28-35	Do.	..	Do.	..	Do.	Can be acquired under Land Acquisition Act at Rs. 1,000 per acre.
80 Chittoor Municipality ..	20-00	Do.	..	Do.	..	Do.	Yes, at Rs. 8,000 per acre.

APPENDIX XIII—cont.

Statement showing sites selected for housing schemes in municipalities and major panchayats by the Housing Committee—cont.

Serial number and name of the panchayat board or municipality.	(1)	(2)	Whether it is Government, and if so, whether it can be alienated free of cost.	(3)	If not alienated free of cost, whether it can be sold for the scheme? If so, at what cost?	(4)	If private, whether it can be purchased by private negotiations and if so, at what price?	(5)	If not secured by private negotiations, whether it can be secured under Land Acquisition Act and if so, probable cost.	(6)
MADRAS DISTRICT.										
81 Cumbum Panchayat Board ..	ACS. 20-15	2-98 acres	Government lands, rest private.	..	Can be sold for the scheme at Rs. 5,000 per acre.	..	The remaining private lands cannot be secured by private negotiations.	Yes, at Rs. 5,000 per acre.		
82 Sholavandan Panchayat Board.	35-61	Not	Government lands	..	Does not arise	..	Cannot be secured by private negotiations.	If not secured by private negotiations, the probable cost will be Rs. 2,500 per acre.		
83 Trumangalam Panchayat Board	20-00	Do.	Do.	..	Do.	If not secured by private negotiations, the probable cost will be Rs. 1,900 per acre.		
84 Nilakkottai Panchayat Board ..	25-52	Do.	Do.	..	Do.	If not secured by private negotiations, the probable cost will be Rs. 800 per acre.		
85 Avaniapuram Panchayat Board	26-91	Do.	Do.	..	Do.	If not secured by private negotiations, the probable cost will be Rs. 500 per acre.		
86 Uttamapalayam Panchayat Board	23-15	Do.	Do.	..	Do.	If not secured by private negotiations, the probable cost will be Rs. 1,000 per acre.		
87 Batlagunda Panchayat Board ..	27-81	Do.	Do.	..	Do.	If not secured by private negotiations, the probable cost will be Rs. 200 per acre.		
88 Usilampatti Panchayat Board ..	20-00	Do.	Do.	..	Do.	If not secured by private negotiations, the probable cost will be Rs. 1,500 per acre.		
89 Allinagaram Panchayat Board ..	20-00	Do.	Do.	..	Do.	If not secured by private negotiations, the probable cost will be Rs. 5,000 per acre.		
90 Pami Municipality	33-36	Do.	Do.	..	Do.	If not secured by private negotiations, the probable cost will be Rs. 2,000 per acre.		
91 Kodaikanal Municipality ..	60-00	Government land	It can be sold at Rs. 40 per acre for the housing scheme.		
92 Dindigul Municipality ..	25-11	1-03 acres	Government land. The rest are registered holdings classed dry available for assignment.	..	1-03 acres can be sold at Rs. 2,000 per acre.	Yes, at Rs. 2,000 per acre.		

RAMNAD DISTRICT.

		Not Government lands	Does not arise	Cannot be secured by private negotiations.	The site has to be acquired under Land Acquisition Act. The probable cost per acre is Rs. 1,000 plus the value of the palmyra and other trees in the entire plot, i.e., Rs. 1,000.
93 Ramnad Panchayat Board	20-00	Do.	Do.	Do.	The site has to be acquired under Land Acquisition Act. Cost not furnished.
94 Paramakudi Panchayat Board.	20-00	Do.	Do.	Do.	Do.
95 Virudunagar Municipality	(1) 51-00 (2) 20-00 (3) 20-00 (4) 46-28 (5) 22-29 (1) 23-91 (2) 25-33 (3) 24-25 (4) 26-76 (1) 30-00 (2) 46-00	Do.	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 3,000 per acre.
96 Srivilliputtur Municipality	20-00	Do.	Do.	Do.	Do.
97 Rajapalayam Municipality	20-00	Do.	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 1,500 per acre.
98 Sivakasi Municipality	20-00	Do.	Do.	Do.	Do.
99 Aruppukottai Panchayat Board.	20-00	Do.	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 2,000 per acre.
100 Sattur Panchayat Board	20-00	Do.	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 1,000 per acre.

TRICHINOPOLY DISTRICT.

101 Trichinopoly Municipality	324-19	124-19 acres, Government lands, rest private.	124-19 acres belonging to the Military can be sold for the scheme at Rs. 2,500 per acre.	Cannot be secured by private negotiations.	Can be acquired under Land Acquisition Act at Rs. 3,000 per acre.
102 Srirangam Municipality	38-50	1-00 acre, Government lands, rest private.	Can be sold for the scheme as per rules.	Do.	Do.
103 Karur Municipality	41-32	Not Government lands	Does not arise	Do.	Can be acquired under Land Acquisition Act at Rs. 3,542 per acre.
104 Musiri Panchayat Board	21-00	Do.	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 3,000 per acre.
105 Turaiyur Panchayat Board	27-00	Do.	Do.	Do.	Can be acquired under Land Acquisition Act at Rs. 3,700 per acre.

APPENDIX XIII—cont.

Statement showing sites selected for housing schemes in municipalities and major panchayats by Housing Committees—cont.

Serial number and name of the panchayat board or municipality.	(1)	Extent of site selected for housing.	(2)	Whether it is Government, and if so, whether it can be alienated free of cost.	(3)	If not alienated free of cost, whether it can be sold for the scheme? If so, at what cost?	(4)	If private, whether it can be purchased by private negotiations and if so, at what price?	(5)	If not secured by private negotiations whether it can be acquired under Land Acquisition Act and if so probable cost.	(6)
TRICHINOPOLY DISTRICT—cont.											
106 Lalgudi Panchayat Board	..	ACS. 21-00	..	Not Government lands	..	Does not arise	..	Cannot be secured by private negotiations.	..	Can be acquired under Land Acquisition Act at Rs. 6,000 per acre.	
107 Perambalur Panchayat Board	..	26-77	..	Do.	..	Do.	..	Do.	..	Can be acquired under Land Acquisition Act at Rs. 500 per acre.	
108 Jayamkondacholapuram Panchayat Board.	..	27-68	..	Do.	..	Do.	..	Do.	..	Can be acquired under Land Acquisition Act at Rs. 350 per acre.	
109 Ariyalur Panchayat Board	..	21-00	..	Do.	..	Do.	..	Do.	..	Can be acquired under Land Acquisition Act at Rs. 400 or Rs. 600 per acre.	
110 Manapparai Panchayat Board	..	22-45	..	Do.	..	Do.	..	Do.	..	Can be acquired under Land Acquisition Act at Rs. 4,000 per acre.	
NELLORE DISTRICT.											
111 Buchiredipalayam Panchayat Board.	..	25-00	..	Not Government lands	..	Does not arise	..	Cannot be secured by private negotiations.	..	Can be acquired under Land Acquisition Act at Rs. 4,000 per acre.	
1112 Kovur Panchayat Board	..	25-00	..	Do.	..	Do.	..	Do.	..	Can be acquired under Land Acquisition Act at Rs. 3,000 to Rs. 3,500 per acre.	
1113 Kavali Panchayat Board	..	22-23	..	A part of Government land can be alienated free of cost, rest are private lands.	..	Do.	..	Private lands cannot be secured by private negotiations.	..	Can be acquired under Land Acquisition Act at Rs. 2,500 per acre.	
114 Allur Panchayat Board	..	19-97	..	1-74 acres, Government lands (poramboke). Can be alienated free of cost, rest private lands.	..	Do.	..	Cannot be secured by private negotiations.	..	Can be acquired under Land Acquisition Act at Rs. 3,000 per acre.	
115 Sulturpet Panchayat Board	..	22-03	..	Not Government lands	..	Do.	..	Do.	..	Can be acquired under Land Acquisition Act at Rs. 3,000 to Rs. 5,000 per acre.	
116 Naidupet Panchayat Board	..	20-00	..	Do.	..	Do.	..	Do.	..	May be secured by private negotiations at Rs. 500 per acre.	
117 Venkatagiri Panchayat Board	..	20-00	..	Do.	..	Do.	..	Do.	..	Yes, at Rs. 500 per acre.	

SALEM DISTRICT.

118 Krishnagiri Panchayat Board ..	21-39	Not Government lands	..	Does not arise	..	Cannot be secured by private negotiations.	Can be acquired under Land Acquisition Act at Rs. 3,000 per acre plus 15 per cent solatium per acre.
119 Kaveripatnam Panchayat Board.	26-54	Do.	..	Do.	..	Do.	Can be acquired under Land Acquisition Act at Rs. 1,500 per acre.
120 Hosur Panchayat Board ..	22-00	Government land	..	Government land at Rs. 500 per acre.	..	Do.
121 Namakkal Panchayat Board ..	20-00	Not Government lands	..	Does not arise	..	Do.	Can be acquired under Land Acquisition Act at Rs. 750 per acre.
122 Rasipuram Panchayat Board ..	20-36	Do.	..	Do.	..	Do.	Can be acquired under Land Acquisition Act at Rs. 6,000 per acre.

EAST GODAVARI DISTRICT.

123	Peddapuram Municipality	..	24-91	0-30 acre poramboke lands can be alienated free of cost. Rest private lands.	Does not arise	Cannot be secured by private negotiations.	Can be acquired under Land Acquisition Act at Rs. 600 per acre.
124	Dowlaiswaram Panchayat Board.		20-00	Government lands. Can be alienated free of cost.	It can be sold at Rs. 100 per acre.
125	Bikkavolu Panchayat Board	..	20-00	Not Government lands	Does not arise	Cannot be secured by private negotiations.	Can be acquired under Land Acquisition Act at Rs. 3,000 per acre.

APPENDIX XIV.

(Vide paragraph 256.)

Training of Masons for a 20-year Housing Project for the Madras City.

Annual average output of houses in the Madras City for the decennium, 1931—1941	1,500
Average number of mason units required for a house	500
The output of a mason for a year of 300 working days	300 mason unit
Number of new houses required in the City	165,000
20 per cent increase for the increase in population for the next 20 years	33,000
Total ..	1,98,000
Number of houses to be constructed per year (on a 20-year programme) $198,000/20$	9,900
or	
in round figures	10,000
Number of mason units required per year $500 \times 10,000$	5,000,000
Number of masons required at 300 mason units per year $5,000,000/300$	17,000
Each trade school may train 100 masons in 3 months or 400 masons per annum.	
Number of Trade schools required $\frac{17,000}{400} = 42.5$ or <u>40</u> in round figures.	

